

MANUFACTURERS' RECORD.

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Manufacturers' Record.

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BALTIMORE, FEBRUARY 19, 1897.

America to the Front.

For the solution of the problem of manufacturing industries in this country, Mr. A. E. Outerbridge, Jr., suggests, in an article in the Journal of the Franklin Institute for the current month, either further curtailment of production or enlargement of American markets. The author is dealing with the future of American industries, and he not only inclines very strongly to the idea of a wider market, but quotes many facts and figures indicating that his inclination is in the right direction. The total exports of manufactures for 1896 he estimates at \$250,000,000, or \$50,000,000 more than in 1895, which showed an increase of \$25,000,000 over 1894. About 70 per cent. of this value includes manufactures in which skilled labor forms the largest element of cost. How this increase is possible in the face of the contention, long maintained, that the relatively high wages paid to skilled labor in America, as compared with wages in European countries, preclude successful competition, is explained by the fact that American labor is much more efficient. Wonderful advances made in labor-saving machinery, supervised by intelligent, highly-paid operatives, has enormously increased the productive capacity of each operative and reduced correspondingly the cost per unit of product.

This situation, Mr. Outerbridge contends, interjects a new element into the ethics of the wage question and into the question of cost.

Whatever may be the cause, and whatever its effect upon the questions of cost and wages, it is beyond dispute that in some directions American products do compete successfully with foreign-made ones in their own field. As long as Alabama pig iron can be sold at a profit in London, and American watches are sold in Bradford, there is every reason to believe that long-accepted traditions in trade are becoming fallacies under stress of American ingenuity, skill and enterprise, and that carrying coals to Newcastle may cease to be an absurdity.

A Wonderful Showing, Indeed.

The lumber manufacturers throughout the country have been complaining very much for several years about business being unprofitable, but evidently there must be some mistake. Either they are all badly located or else they do not understand their business. A study of an advertisement in the United States Investor, of Boston, of February 13 will prove this. In this advertisement, which is in effect a prospectus of the East Tennessee Lumber & Mining Co., some statements are made that will doubtless interest all lumber dealers and investors. Although the company has been formed to operate in the South, the Manufacturers' Record is glad to say that it is a New England undertaking, because if any of its statements should not be fully realized, the blame must rest upon conservative New England, and not upon the South. And, by the way, it is interesting, and possibly appropriate, to say in this connection that New England companies organized to exploit Southern resources have not always proved as profitable to stockholders as they had anticipated. Whenever this occurs the blame is put upon the South, though the South is in no way responsible. Coming back to this particular company, however, we find that it advertises that it has a capital of \$1,500,000, and that a limited amount of its \$250,000 of treasury stock is offered for sale. The company is advertised as owning 39,500 acres of land in Tennessee, and is reported as building sixteen and two-thirds miles of railroad and a saw mill. The financial situation is put as follows:

VARIETIES, AMOUNTS AND VALUES OF STANDING TIMBER.

	Feet B. M.	N. Y. value per 1000.	Gross value.
Whitewood or poplar.....	2,064,000,000	\$26 35	\$54,386,000
Chestnut	790,000,000	27 62½	21,823,000
Cherry	342,000,000	68 00	23,256,000
Oak	116,000,000	34 00	3,944,000
White pine.....	321,000,000	25 00	8,025,000
Ash	152,000,000	29 00	4,408,000
Beech	81,000,000	19 12½	1,549,000
Maple	352,000,000	19 12½	6,732,000
Birch	285,000,000	19 12½	5,545,000
Miscellaneous hardwoods.....	37,000,000	50 00	1,850,000
Hemlock spruce.....	1,475,000,000	11 00	16,225,000

6,015,000,000 feet of a total value of... \$147,743,000

Hemlock bark..... 700,000 cords valued at mill at \$5. 3,500,000

Estimated cost of logging, milling, freights and commissions..... \$151,243,000

Net value of product when marketed applicable to payment of dividends.. \$102,413,000

CAPACITY OF MILL PLANT.

Each ten hours..... 140,000 feet. - Continuous run, night and day.. 300,000 feet.

DIVIDENDS.

The company can earn and pay the following dividends:

Upon a daily output of 50,000 feet.....	17½ per cent.
Upon a daily output of 100,000 feet.....	35 per cent.
Upon a daily output of 200,000 feet.....	70 per cent.
Upon a daily output of 300,000 feet.....	105 per cent.

The Manufacturers' Record loves to see such matters put in exact form, and it is, therefore, very interesting to note the care and exactness with which the New York value of this lumber is given. If, for instance, chestnut had been reported in round figures at \$27, or even at \$27.60, or even

\$27.62, some one might think that this was only an approximate estimate; but when it is figured down so fine as \$27.62½, and when the "½c." is found in a number of other cases, then the conviction is overpowering that here is a case of exact scientific statement in a prospectus that must immediately command attention.

Owners of Southern timber lands have sometimes been accused of holding their property at high figures, but the statement of these conservative New England people shows that Southern timber lands are far more valuable than we had supposed. In the light of these figures the South can mark up the value of its timber lands to a point where this section will be the richest country (on paper) in the world. Here are 39,500 acres of timber land, doubtless very good timber land, estimated by these Boston financiers to be worth \$151,243,000 (it is to be regretted that the cents are not given), and that the cost of cutting, sawing, shipping and selling will be \$48,830,000, leaving a net profit of \$102,413,000, or nearly \$3000 per acre. Now, the South has probably at least 100,000,000 acres of land just as good as this 39,000-acre tract; but suppose we admit that this piece of property is so much above the average that there are only a matter of say 50,000,000 acres of as fine quality. At \$3000 net value per acre this would figure out something like \$150,000,000,000. We admit that this looks very large, especially in view of the fact that it is rather more than the reported combined wealth of the United States and Great Britain, but we would not presume to criticize the correctness of the figures of the Boston people on their

How the Round Bale Will Benefit the South.

Some years ago the Manufacturers' Record published a letter from a Southern cotton-grower, in which the claim was made that the South's best interests demanded a study of all methods that looked to the elimination of every unnecessary cost in the production and marketing of cotton.

"Upon this," said the writer of that letter, "may in the future depend the South's monopoly and control of the world's cotton markets." And he added: "If we would avoid the danger of stimulating cotton production in Egypt and other countries, we must work to see, not how little cotton we can raise to sell at high prices, but how much cotton we can produce at a low cost—as a surplus crop after raising our own food supplies—in order that we may command the world's market and prevent the development of cotton-growing in other lands."

That communication, written at a time when few people imagined that cotton would ever sell as low as five or six cents a pound, was severely criticised by many people. It was claimed by these critics that the South could not raise its own foodstuffs in competition with the West, and that low-price cotton meant poverty for the South.

The record of the last few years shows that the planter was correct; that the South's true policy was and is to raise its own foodstuffs first; and then, by cheapening the actual cost of the production of cotton, make it as profitable to the grower at the low price as it had formerly been at a high price, and thus extend the world's consumption. On this point, conclusively showing the beneficial results of such an economic system, ex-Governor Evans, of South Carolina, in an interview in the New York Mail and Express of February 15, said:

Our people are in better circumstances and are living more comfortably than at any time in the past twenty years. They have practiced economy and are beginning to enjoy the fruits of it. When cotton sold for eleven and twelve cents per pound South Carolina bought nearly all of her corn and bacon of the West. A vast amount of money was sent out of the State in this way. When the price of cotton began to decline our farmers had less money to spend, and they commenced to raise more of what they consumed on their own farms. Now cotton is only worth seven cents per pound, and I do not think our people import 500 pounds of either corn or bacon. We are raising everything that we consume, and our soil will produce anything. Cotton is low, but we are raising just as much as formerly, and by the practice of economy and the application of the principle of home production we are getting along very well.

Thus we may see how the road to prosperity for the agriculturist lies in the same direction as that for the merchant or the manufacturer—through curtailing expenses and making the most of fractional advantages. The successful manufacturer gains a fractional advantage by unceasing vigilance in looking out for and quickly adopting new inventions. To him what

was machinery yesterday is often only scrap iron today. What is true with the manufacturer is equally true with the farmer, for economic laws recognize no favorites.

The one invention of the age which promises most to the cotton-growers of the South, and thus to all Southern business interests, is the new baling system, by means of which many burdensome charges, which now, in their final analysis, fall upon the cotton-growers, are eliminated from the cost of handling the South's great staple.

The revolution in the iron industry fitly illustrates and foreshadows what the cylindrical-baling system gives assurance of bringing out in the handling of cotton. Better systems and methods, the use of improved mechanical appliances, have cut the average cost of making iron at the best Alabama furnaces almost in half during the last ten years. And this surprising reduction, which is commanding world-wide attention, is enabling the South to dictate the price of iron to the world—a change that marks the beginning of the greatest industrial revolution of the age.

On account of the force of the foregoing facts, and the resultant conclusions, the Manufacturers' Record emphasizes the value of the perfected round-bale system, in which it believes are wrapped up possibilities of almost incalculable good to the South, because the introduction of this system will make necessary better handling of every bale of cotton marketed, whether compressed in a round bale or a square bale. The days of barbarously-handled cotton are numbered, and the round-bale system is the force that has done this good work. The series of news items and comments heretofore published showing successive stages of development—the gradual evolution—of the cylindrical bale, is therefore supplemented in this issue by a full and comprehensive description, the first ever published, embracing, in detail, the comparative advantages of the new system over the old.

A Wise Move by Alabama.

Governor Johnston, of Alabama, in his first message to the legislature strongly urged the importance of attracting to the State a desirable class of settlers. Among the most desirable immigrants are those with capital to build up and develop the industries. As an indication that his words did not fall upon barren soil, the Governor has just had the pleasure of signing a bill passed by the House and Senate with Hunt's amendment exempting from State, county and municipal taxation for ten years all cotton mills hereafter to be erected to the extent of \$50,000, and including any additions that may be made to existing plants to a similar amount. Such an act is an attraction to outside capitalists, without doing an injustice to industries already established, and while it is an example for other States, it should give a great impulse to the manufacturing industries of Alabama.

The Virginia Board of Agriculture has issued a call to similar organizations throughout the country to send delegates to meet at the Ebbitt House, Washington, on March 5. It is understood that the currency question, as viewed from the standpoint of agriculturists throughout the country, will be one of the principal topics of discussion. President A. S. Buford, of the Virginia body, and State Commissioner Thomas Whitehead are signers of the call.

Creating Good Times.

Mr. Stuyvesant Fish, president of the Illinois Central Railroad Co., preached a very practical sermon in industrial economics the other day in explaining an order for 50,000 tons of steel rails. The chief engineer of the road had recommended the purchase of 25,400 tons for this year's renewals, but the directors authorized the purchase of 24,600 tons additional. Alluding to that, Mr. Fish said:

Our action in doubling our purchases of rails has been predicated on the cheapness of articles and appreciation that activity in the iron trade means a rising commercial barometer and a desire to do what in us lies to give employment to labor and capital by setting both at work. If the other roads will likewise avail of present quotations to place orders for enough rails to repair one-tenth of their entire mileage this year, we shall certainly see increased activity in every branch of trade at an early day. As the general commercial conditions are good and sound, and prices of raw material and staple goods being unusually low, we need but a revival in the iron trade to set the wheels of commerce in motion. I for one believe that we have now got over the dead centre. It remains for others, manufacturers, merchants and bankers alike, to see matters in the same light.

Mr. Fish stated, moreover, that on the 4400 miles of railroad operated by the Illinois Central and its branches there is neither a workable deposit of iron ore nor coking coal fit for use in a blast furnace; that, as far as he knew, no director or officer of the company had the slightest interest in the manufacture of steel, and that the company has less interest in that trade than any other large system in the country, and, therefore, that if his road could take the initiative in such an order, how much more important is it for other roads that are directly interested by having coal and iron enterprises along their lines.

The important influence of the railroads upon general commercial health is indicated in the reported purchase by the Pennsylvania Railroad of steel rails before the reduction came, for the purpose of maintaining the activity of manufacturing towns along its route, in accordance with its time-honored policy.

The Illinois Central has not a blast furnace or a rolling mill on its line outside of Chicago, but it realizes the disadvantages of idle capital and idle labor; it knows that work for both, in improving or extending a railroad, means immediate local activity, with increased resources for developing the general prosperity induced thereby, and it has acted promptly and wisely.

Its example should be followed wherever possible. The dead centre passed by reason of the exertions of the railroads, the great machine of trade and manufactures will resume its regular motion of progress, and the railroads will share in the beneficial results, which are beyond question.

Fat Pine Kindling Wanted.

The Waynesville Coal Co., of Waynesville, N. C., would like to know the address of some party in South Carolina or Georgia from whom fat pine kindling can be purchased.

The Charleston (S. C.) Chamber of Commerce at its annual meeting re-elected its present officers, who are as follows: President, T. R. McGahan; first vice-president, George B. Edwards; second vice-president, J. R. Read; secretary and treasurer, St. J. P. Kinloch. This is one of the oldest business organizations in the country, the last annual meeting being its 113th.

NOTES FROM NEW YORK.

The Financial Views of Mr. Stuyvesant Fish—Some Cheerful Sentiments Expressed by Ex-Governor Evans, of South Carolina.

I have just listened for an hour to Mr. Stuyvesant Fish, who took time to explain to me the causes of the dearth of currency in the South and West and to point out a way of relief. Nothing I had ever read or heard either made it so plain how this lamentable state of things had come about or pointed out so clearly how easy it will be for Congress during the extra session to enact legislation that will remove all ground for discontent on the score of scarce money. If President-elect McKinley could have been present he would have got some pointers for his proclamation calling the extra session.

As is well known, few men in this country are so well qualified to discuss our financial system, either from a scientific or a sympathetic standpoint. He is vice-president of the Park National Bank of New York, president of the Illinois Central Railroad Co., and a man of intense sincerity and of broad, far-reaching human sympathies. He spent last summer and part of the fall in Europe, and has devoted a great deal of time and attention to the observation and study of comparative financial conditions there and here. Those lively, sympathetic instincts which characterize all strong, broad-minded, really forceful natures have led him into the habit of looking situations squarely in the face from "the other fellow's" point of view as well as from his own. He saw and commented on and sympathized with the hardships that led the people of the sections where there was little or no money in circulation to turn in their despair to "free silver" long before the recent alleged "revelations" were made by Mr. William E. Dodge in his speech before the New York Chamber of Commerce; and the people of the West and South—but especially those of the South—will graciously and gladly listen to what he may say now, just as they did when he argued against free silver during the heat of the campaign last fall.

Realizing this, I secured his consent to print in the Manufacturers' Record as an interview what he had said to me. It will appear so soon (after his return from a Western trip) as he can find time to revise my report of it. Should he allow the publication of all that he said today, it will prove the most interesting and most quoted and commented on expression of news that has appeared in print since the election, unless we except the heretofore-mentioned speech of Mr. Dodge, of New York.

Should the remedy suggested by Mr. Fish for these money-droughts, whose very existence ought to bring into speedy condemnation any system under which their occurrence is possible, be proposed by the powers that be in the extra session of Congress, I doubt if even the most ultra of the silver senators will oppose its application. Some of these have advocated free silver only because of the apparent hopelessness of discovering any better remedy, or of getting it adopted if discovered.

A SIGNIFICANT UTTERANCE BY EX-GOVERNOR EVANS.

I think the present state of feeling in the South is accurately represented by some sentiments expressed today by ex-Governor Evans, of South Carolina, in an interview which was published in the Mail and Express, from which the following is an extract:

"I have just come from Washington, and, from the conversation I had with senators and representatives, I have come

to the conclusion that the new Congress will adopt some measure to provide an elastic currency. That will satisfy our people. We do not care so much for free silver per se. What we want is a greater volume of money."

And what Governor Evans here admits is identically what the Manufacturers' Record has all along maintained, and if the new Congress will speedily pass a common-sense measure, based on the necessities of the people, the clamor for free silver will never be heard again. It is not, however, quite what the people think they want—a greater volume of money—that will prove so satisfying as a better system for the distribution of what money we may have—a system that will make it impossible for so many millions to be piled up in New York, while the far-away States have to do business on a basis of barter through lack of currency.

In the interview in today's Mail and Express Governor Evans also takes occasion to say some things about South Carolina which he might with truth have said about the entire cotton country; for instance, the following:

"South Carolina is as prosperous as any State in the Union, if not the most prosperous," continued Mr. Evans. "Our people are in better circumstances and are living more comfortably than at any time in the past twenty years. They have practiced economy, and are beginning to enjoy the fruits of it. When cotton sold for eleven and twelve cents per pound South Carolina bought nearly all of her corn and bacon of the West. A vast amount of money was sent out of the State in this way. When the price of cotton began to decline our farmers had less money to spend, and they commenced to raise more of what they consumed on their own farms. Now cotton is only worth seven cents per pound, and I do not think our people import 500 pounds of either corn or bacon. We are raising everything that we consume, and our soil will produce anything. Cotton is low, but we are raising just as much as formerly, and by the practice of economy and the application of the principle of home production we are getting along very well."

Thus we have already everything in the South "to make its calling and election sure" as the field for immigration, enterprise, development, prosperity. True, in order to secure these to the uttermost there must be the right kind of money, or rather the right kind of financial system, and the right kind of State laws for safeguarding capital and thereby establishing confidence in the minds of investors. The new Congress will, let us hope, provide the first; the present or future State legislatures will enact the second so soon as the people of the various Southern States are aroused to a realization of what is lacking and what is needed.

THOMAS P. GRASTY.

New York, February 16.

Industrial News from Birmingham.

[Special Cor. Manufacturers' Record.]

Birmingham, Ala., February 16.

The trend of the iron market has been quiet and steady the past week, but towards the close there was a more active inquiry. On Friday the sales of the leading interest aggregated the largest amount for any one day since the November election. With this true, one cannot attribute it to the steel-rail war, because the activity was not great enough to ascribe it to an unusual influential factor. It was only in "the usual course of business." Quotations are continued on the basis of \$6.25 for gray forge and \$7.75 for No. 1 foundry, with these fig-

ures as inside prices. Some of the interests are declining orders at prices quoted, and ask twenty-five to fifty cents advance. It is too early yet to say what, if any, influence the disruption of the steel-rail pool will have on the market. Opinion inclines to the belief that it will stimulate buying, and, barring no European war, create a great activity from domestic sources. The foreign trade continues to be encouraging in so far as acceptable orders are concerned. But as the season for shipment of cotton and grain cargoes approaches its end the problem of satisfactory freight rates for iron becomes more difficult. The margin of profit is too small to encourage much "chancing" as to room and rates, and an option in hand is the only safety now in accepting orders. Foreign orders were accepted the past week aggregating 8000 tons. Had freight conditions been favorable they would have been more than double that quantity. Preparations are being pushed to uncover the site of the steel plant by removing the buildings that occupied it, and there will be neither delay nor halting in its erection. As before stated, it will be an adjunct of the rolling mill, controlled and directed by that interest. It will be modern in every respect, containing all the improvements that experience has found necessary for the efficient working of a first-class plant. As it has been in contemplation for four years or longer, its promoters have a thorough knowledge of the points necessary to build a successful mill. They know just what they want, and why they want it. Under such circumstances we cannot fail in securing a first-class mill. The rolling-mill plant, with this addition, will then represent a capital of \$700,000. And behind this is practical experience and familiarity with the business world and methods in this line. Everything looks so favorable concerning the print mill that there is no hazard in the announcement that it is practically secured. The amount asked of the people here is so nearly subscribed that there is no danger of its falling through now. The minor industries report nothing the past week of moment. But the increased work is noticeable, and the prospects are improving, for all are doing more or less figuring on estimates. J. M. K.

Some Interesting Facts About Charleston, S. C.

Charleston, S. C., February 8.

Editor *Manufacturers' Record*:

I take pleasure in replying to your letter of recent date, asking for some information about the general situation at Charleston and in regard to the material development here in various directions, concerning which there has been considerable mention of late in the press of the Eastern cities.

The great financial stringency of the year 1896, which brought disaster and ruin to the commercial and manufacturing interests of so many cities throughout the Union, was scarcely felt at Charleston. We passed through the depression without a single failure, and there was practically no reduction in the lines of credit extended by the banks to their customers. This statement may be better appreciated and more readily credited when it is stated that Charleston has the largest banking capital and deposits of any place of its size in the country. Charleston may well be proud of her magnificent banking facilities, which supply cheap money, not only for all the demands of her own commercial interests, but also for those of the entire State.

The general improvement in Charleston during the past year has been more marked than in any year of its history since the close of the war. The general

trade, both in retail and wholesale lines, in almost every class of business has been better than for some years. All merchants in nearly every branch of trade, in both retail and wholesale lines, and all manufacturers express great satisfaction at the volume of business done and the profits made on their sales during the past year.

The so much abused credit system, carried to an extent in the Southeast not reached in any other section of the country, and which in the past has brought much loss upon Charleston merchants, has undergone a great change in the last two years. Business has adjusted itself to something approaching a cash basis. This is largely due to the prosperity of the farmer. It has been a great many years since the farmers of the State have been in so prosperous a condition as they are now. Their prosperity has meant prosperity for the merchant, for the banker, for the artisan and for the professional man. Thus is it shown how much depends upon the yeomanry of the country.

In regard to our material development, I will enumerate as briefly as is consistent with proper mention some of the enterprises started during the past twelve months, now under way and in full operation, with promise of yielding satisfactory returns and results to their projectors.

The Clyde Steamship Co. has established a line of freight steamers between Charleston and Boston. Heretofore the only steamship connection between Charleston and the East has been by the Clyde Line to New York. It is confidently expected that this line will make a considerable increase in the tonnage receipts of this port.

The Security Construction Co., organized to build the Charleston & Macon Railroad, which had to suspend operations during the financial depression prior to the election, is now actively at work on the project of completing the road. Propositions have been made to the company by prominent Eastern capitalists to apply its funds to the construction of a road in another direction. These propositions the company now has under consideration.

A direct steamship line has been established from Charleston by the South Carolina & Georgia Railroad, the Georgia and the Louisville & Nashville Railroads to Liverpool and Manchester. Bi-monthly sailings will be made from Charleston to these ports. Grain, cotton, flour, pig iron, hardwoods and tobacco in the leaf and manufactured will be the principal articles of export, and salt, cement, tinplate, liquors and crockery the principal imports.

One of the most important enterprises started within the last few months has been the organization of an importing and exporting company. The main business of the company will be to import coffee from South American countries, returning the vessels with cargoes of the cotton piece goods of this State, which are so largely used in the South American republics. The business will be started by sailing vessels, but later on it is expected that steamships will be utilized in this service. There is an abundance of capital back of the incorporators of the company, and there is every reason to believe that their venture will prove a success, both as to importing and exporting.

A knitting mill, employing fifty hands, with a capital stock of \$50,000, was organized about eight months ago. It has been highly successful, and the stockholders talk of doubling their capacity within the next few months.

A shoe factory, with a capital stock of \$50,000, has been started within the last

few months, and promises to be a most successful enterprise. This institution gives employment at present to about fifty people.

There is now being constructed in Charleston by New York capitalists an electric street-car system which will be one of the finest and best equipped in the United States. When completed it will have nearly forty miles of track. It is stated that the proprietors of this line also expect to build here a magnificent modern hotel for the accommodation of winter tourists, who flock to Charleston from December 1 until the middle of April.

Few people outside of Charleston have any idea of the enormous industrial and commercial resources of the community. Let me state briefly what some of them are:

The largest truck garden farms in the United States are found within a radius of fifteen miles around Charleston. The cultivation on these farms is excelled nowhere in the world, not even in the agricultural districts of France and Germany, where intense farming is so universal. Such is the statement repeatedly made by visitors who have come here from those countries. The produce commission merchants in Northern markets pronounce Charleston the best locality on the South Atlantic coast for market gardens, for the reason that the products mature at exactly the right time, that is, just at the beginning of the warm weather North, and when people begin to feel as if they would like to eat spring fruits and vegetables. The points to the south of Charleston are often at a disadvantage when their products reach the Northern markets in any quantity, for the reason that people generally do not feel like eating spring fruits and vegetables when there is snow and ice. The usual size of market gardens is from five to several hundred acres, so that it lies within the power of men of most modest means to acquire sufficient land to farm on their own account.

Charleston is the largest fertilizer market in the world, and here are located the largest fertilizer factories in the world. The shipments of fertilizer from Charleston this season will amount to 350,000 tons.

While South Carolina, owing to her limited area, no longer holds the first place among the States as to rice production, in the quality of this cereal she maintains this place, not only in this country, but in the whole world. The finest rice grown in the world is produced in South Carolina within a radius of fifty miles around Charleston.

Sea Island cotton of the highest grade is grown only on the islands adjacent to Charleston. While Sea Island cotton is grown along the coast of Georgia and Florida, it is, when compared to Charleston's Sea Island cotton, of inferior quality.

The imperative demand at Charleston, the necessity of the hour, if I may so express it, is manufacturing enterprises. That our own people have confidence in manufacturing interests here is quite well evidenced by the fact that of the \$10,000,000 now invested in manufacturing here, every dollar of it (barring a very small amount of the stock in two or three fertilizer factories) is Charleston money. With the vast standing forests of commercial timber in the territory adjacent to Charleston, no place in the country offers so inviting a field for a manufacturing establishment of wooden articles, plow handles, axe helves, wagons, etc. These forests also abound with the woods best adapted, as has been stated by experts, for making paper pulp, for which there is such constant and in-

creasing demand throughout the civilized world.

Apart from the resources in her immediate vicinity, Charleston has the vast resources of the entire State to draw upon and increase her prosperity. With her capital she has aided in the past to develop these resources, and she will continue to do so in the future. She knows that with the prosperity and development of the State she will also grow and prosper. South Carolina's resources are as great and diversified as any similar area of territory in any section of the Union. Her great diversity of crops, the staples being cotton, rice, tobacco, corn, peanuts and truck garden products, her vast manufacturing interests in cotton goods yearly increasing, her inexhaustible supply of soft and hard woods, her granite quarry interests—the granite of the quarry at Rockton, S. C., having recently been pronounced by European experts to be the finest yet developed in the whole world—will place her in another decade first and foremost amongst all Southern States. With the position of general servant, the position of hewer of wood and drawer of water from the East, we long ago ceased to be content. South Carolina and Charleston are in the line of march of an upward progress, and in business development, as we have done in other things, we yet expect to gain the admiring ears and eyes of the civilized world. GEORGE B. EDWARDS,

Vice-President Chamber of Commerce.

An Attractive Region.

The Seaboard Air Line Railway passes through one of the finest regions in the South. Indeed, it would be hard to find a section anywhere which can produce a greater variety of crops and which has better average land or finer climate. It is high, healthy and fertile.

Plans have already been perfected for the establishment of several colonies in this magnificent stretch of country, one of which is to be made up of German immigrants and another of settlers from the Northwest.

There are already many thriving and growing towns on the Seaboard Air Line in Georgia and the Carolinas, and others will surely be built at an early day. This region is not dependent upon agriculture alone, though it produces cotton, corn, oats and the grasses remarkably well. There is much water-power on the line of this railroad, and at several localities the establishment of manufactories is being agitated. The people of Elberton want a cotton factory and have the means and the pluck to get one.

There are several other points on the Seaboard Air Line where the manufacture of cotton and other things will probably soon be undertaken, and we know of no other region in the South where the prospects of steady and healthy development are brighter.

The *Manufacturers' Record*, which has done a great deal to attract attention to the advantages of the South and to aid practically in the development of the resources of this section, is preparing to publish a large supplement to be devoted entirely to the Seaboard Air Line country. This publication will have an immense circulation, and will certainly be very valuable to the region it describes.

Mr. Albert Phenix, of the *Manufacturers' Record* staff, is now in the South preparing material for the Seaboard Air Line Supplement, and he is assisted in the work by Col. I. W. Avery. The ability and experience of these two gentlemen and the high character of the *Manufacturers' Record* give an ample guaranty that the Seaboard Air Line Supplement will be an admirable publication.—*Atlanta Journal*.

THE NEW ROUND BALE.

Some Facts About a Pending Revolution in the Handling of Cotton.

[Written for Manufacturers' Record by a Staff Correspondent after personal investigations at St. Louis and Chicago.]

In a treatise upon "The Cotton Fibre and Its Improvement," prepared at the request of the New England Cotton Manufacturers' Association, and submitted at their meeting in Atlanta during the exposition in October, 1895, Mr. Edward Atkinson, of Boston, used these words: "But now, comes the beginning of a revolution; the man who first conceived a cylinder bale, made lap by lap, with the air excluded, has done more to modify and improve the treatment of the cotton throughout its course from the field to the fabric than any man who has existed since Whitney invented the gin."

The mechanism for making round, rolled bales of cotton at last has been brought to such practical perfection and is in such strong hands that its almost immediate general use may be set down as a foregone conclusion. Considered as a public blessing, it is ranked by competent authorities as standing next to the sewing machine as the one nineteenth century invention whose use will be productive of the greatest good to the greatest number. The various patents upon which the machine now ready for introduction is based are owned by the American Cotton Co., into which all the other round-bale organizations have been merged, and of which Mr. John E. Searles, of New York, is the president. Associated with him are such men as Mr. Stuyvesant Fish, president of the Illinois Central Railroad Co.; Hon. D. R. Francis, now Secretary of the Interior; Jerome Hill and D. C. Ball, cotton merchants of St. Louis; Senator Jones, of Arkansas; B. P. McDonald, late treasurer and now a director of the M., K. & T. R. R., and Bart Moore, of Waco, and the members of the well-known mechanical organization, the Walburn-Swenson Co., of Chicago.

And so it is safe to assert that both from a financial and mechanical point of view this innovation is not likely to be handled otherwise than in a way rapidly to revolutionize the existing "barbarous system" of baling America's most valuable exportable product. While the details of the final plan that will be adopted for introducing this gin press have not so far been announced (although they will be given out at an early day), the writer has information which justifies the belief that this plan will work in the interest of the cotton-growers, as well as that of the owners of this invention. Indeed, it would be hard to conceive of any invention which, in its very nature, must be more dependent for success upon mutuality of interest and co-operative endeavor between its owners and the producers of cotton, whose profits it will largely increase, than this particular culmination of inventive ingenuity and mechanical skill.

What will be said of this in the ensuing columns is not prompted by any desire to praise or exaggerate its merits, or even to admit a single claim which may not be most incontrovertibly established by unimpeachable testimony. These claims affect the cotton industry from every conceivable point of view. Considered from the planters' standpoint, there are men, not altogether ignorant of the saving which this system of baling may be expected to effect, and of the increased favor which it will secure for American cotton in the world's markets, who make bold to declare that its gen-

eral use will mean a bounty to our Southern cotton-growers equal to several dollars a bale.

Here is a proposition worthy of national investigation and one which, if only half true, is the most interesting possibility, from a Southern point of



NEW AND OLD BALES CONTRASTED.

view, that at the present time can be imagined. This claim is based upon the theory that the grower gets for his cotton the price paid by the spinner, less the cost of intermediary processes and material, such as baling, ties, bagging, handling, hauling, compress charges and the like, which it is calculated now amount in the aggregate to about \$12 per bale. If this estimate be correct, it would seem that a system which sends the cotton from the grower's wagon, fresh from a field, direct to the mills, in superior condition as to fibre and cleanliness, with only one handling, with no "loose," with

crude state of development at the Atlanta Exposition, where, in spite of its imperfections, it was considered the leading attraction; yet had not very important improvements been made since then, and the most ample and substantial financial backing, coupled with the very best assurance of business management, been brought together for the utilization of this invention, the Manufacturers' Record would scarcely have considered it worthy of any elaborate consideration.

There has never been any question concerning the desirability of a change in the system of baling cotton, which for many years has, instead of improving,

been going from bad to worse from the time when six bags of cotton were shipped from Charleston more than a century ago.

But whether this or that particular invention for remedying this evil could be counted on to measure up to the practical requirements which constitute a condition precedent to an important change in any universal system has until now been highly problematical. At the same time it has never been doubted but that so soon as substantial assurance should be given that fit mechanism had been evolved, abundant capital, powerful in-



NEW CYLINDRICAL BALE.

fluence, together with all that men of enterprise could contribute to hasten its utilization, would be speedily forthcoming.

History of the Movement for Cylindrical Cotton Baling.

The machine which is to make the new bales was exhibited in a comparatively

Long before the Atlanta Exposition, at the instance of Mr. Jerome Hill, who has long been one of the active pioneers in the agitation of a better baling system, the writer went as far as Waco, Texas, to see the workings of the first machine (the Bessonette) that turned out merchantable bales. Like everyone else who witnessed its operation, he was profoundly impressed with the promise that

it gave of meeting the multifarious exactions of a revolution in the preparation of the staple for the markets and the mills. Surprising, however, as were the apparent merits of this early bale, a large shipment developed at the mills one fatal defect—the cotton at the core was too tightly rolled to respond readily to existing mechanical appliances for loosening and separating it.

It was easy enough to form direct from the gin a continuous bat of cotton and to roll it up into the semblance of a cylinder, but this was only the a b c of reading the book of commercial success. It was overcoming only one among many difficulties in the way of making a cylindrical bale that could be relied on to comply with imperative commercial demands and likewise to meet the requirements of the machinery in the mills.

Bessonette's invention was good so far as it went. The same may be said of the gin compress of Graves. Improvements in the direction of utility were made by Bessonette and Patterson, as well as by Graves, Anderson and Dyer; but when the history of the cylindrical bale shall come to be impartially written it will be found recorded that the genius of Swenson was necessary in order to make what was good, as far as it went, go to the point of practical utility.

Thus it came about that public confidence in the value of this invention was materially strengthened so soon as it became known that the Walburn-Swenson Company, of Chicago, had undertaken to perfect it; for it was widely realized that during the last twenty years these people had brought out many mechanical specialties which, without exception, had proven of practical utility and successful in a financial way. Moreover, the announcement that they had become heavily interested in this innovation, and that largely through their efforts conflicting interests had been harmonized, was considered as foreshadowing the early fulfillment of all that had been hoped for it as a means of revolutionizing an admittedly iniquitous system.

The Bessonette Cotton Compress Manufacturing Co. worked about four years seeking to develop the round-bale mechanism, and through the faith and zeal of its members invaluable experimental work was done. But to give in detail the various steps towards the final consummation, though they are very interesting, is impossible in this article, the limits of which will barely permit an effort to show the necessity for a new and better system, and how the perfected machine, which now seems on the eve of bringing about a real revolution, does its work; and what is of most importance, how and to what extent the public, especially the planters, will be benefited by the change. Still, it is perhaps worth while, before going into these questions, as an evidence of the substantial way in which the American Cotton Co. is laying the foundation for business and providing in advance facilities for a great output of bale-rolling plants, to say a word about their extensive works at Chicago Heights. This large and admirably-equipped establishment is the first one ever exclusively devoted to remedying the crying commercial evil of the age. It is under the supervision and direction of the mechanical combination which, under the name of the Walburn-Swenson Co., has for some years led in the invention and development of new mechanical contrivances in the sugar, mining and chemical industries. In fact, by common consent, Mr. Walburn, who will remain president of the Walburn-Swenson Co., seems to be recognized, to all practical intents, as the American Cotton Co.'s general man-

ager, while Mr. Swenson is in charge of its mechanical department. Its Chicago offices are in the Monadnock Block. The office of the cotton department, of which D. C. Ball is manager, is in St. Louis.

The works at Chicago Heights consist of the extensive plant of the Walburn-Swenson Co., equipped with complete

as easy to unwind as the final lap in the finished roll. Moreover, the pressure on the bale, through the interposition of easily-manipulated, soft, yielding surfaces, is the same from start to finish, and the cotton at no time comes in contact, as was the case with the press shown at Atlanta, with the hard, un-

tem of covering has been superseded by an ideally simple and serviceable novelty in that line, into which the entire bale is slipped by one additional revolution the moment it is finished, and automatically bound. One of the beauties of this style of covering is that either end of the bale may be easily exposed for sampling or examination by the mere loosening of a string.

With the earlier machines it was also objected, and with some reason, that so soon as one bale was wound up it was necessary to shut down the entire plant

the latter at twenty-four inches. In order to insure absolute uniformity on this score, a bell is automatically rung the moment a given size and weight have been attained.

It has been so far assumed that the reader is familiar, in a general way, with the process of making the cylindrical bale and understands how the combined output of a battery of from four to eight gins is passed to a condenser and there subjected to heavy air pressure, so as to drive out any lingering dirt, and then in the "bat-former" made into a thick, uni-



HOW THE BALE UNROLLS.

special machinery for manufacturing the new press, and comprise a large foundry and machine shop, with all the up-to-date equipments. These works are capable of turning out two finished cylindrical presses every day in the year. In addition to the main plant, an experimental gin and press plant has been established, where all experimental tests are made. In this experimental station a full-sized working press, with gins attached, has been set up, where visitors may witness the entire process. Quantities of seed cotton have been shipped up from the South for this purpose, and I was told that inventors of new ginning and other cotton machinery were invited to have their inventions tested here and probably improved, if not perhaps perfected. So much is said about this plant because its acquisition and equipment by the American Cotton Co. has a notable significance, in that it shows not only that it means to do a very large business, but that it is taking no chances as to the style in which its machines shall be built.

Improvements Made Since Round Baling Was First Tried.

Very naturally, in view of the long time that has elapsed since public attention was first called to the cylindrical bale, there is a widespread eagerness for information about the improvements in the new press which warrant its claim to practical perfection. These consist—first, in the avoidance of difficulties resulting from the fact, already intimated, that in the earlier bales the first few laps were wound too tight, causing an unwindable centre, which, in itself, negatived the utility of the whole system. This drawback, however, has been entirely removed by making the bat uniform and much thicker from the very beginning. Formerly the bat started out from the gin either so thin and irregular as to make a tangled conglomeration around the core, or else, as in some of the patents, it was attempted to start the bale without any core, thereby making the centre of the bale a hard, matted mass of tangled cotton. Today the centre of the bale, from the very first lap, is

yielding surfaces of the iron rollers. So completely have these stumbling-blocks been removed that every bale which the American Cotton Co. turns out is guaranteed to unwind uniformly and perfectly from its circumference to its centre.

Another objection to the earlier bale arose from the difficulty of removing the steel cores. This has been entirely over-

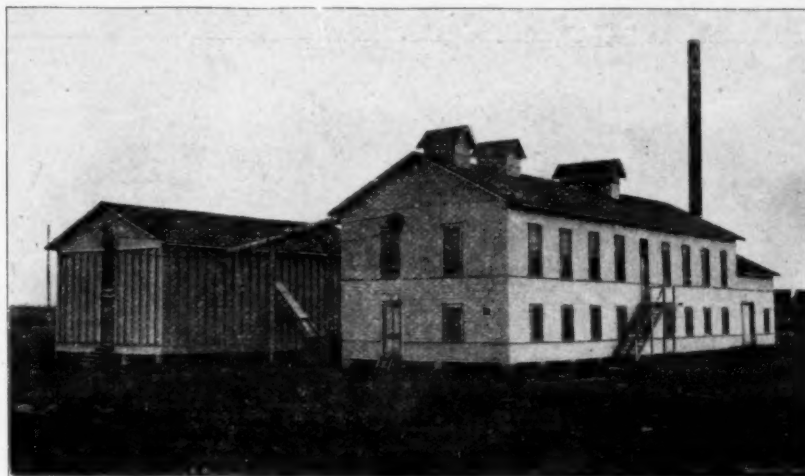
and begin on the next only after the first bale had been covered and removed. This meant not only a considerable loss of time, but great irregularity in the bat, resulting from the impossibility of starting and stopping all the gins simultaneously. With the perfected machine the gin work and the bale-making go on and on together, without interruption, through the use of a duplex press, by means of which the bat may be shifted in an instant from a finished bale to start a new one.

Once upon a time the complaints of

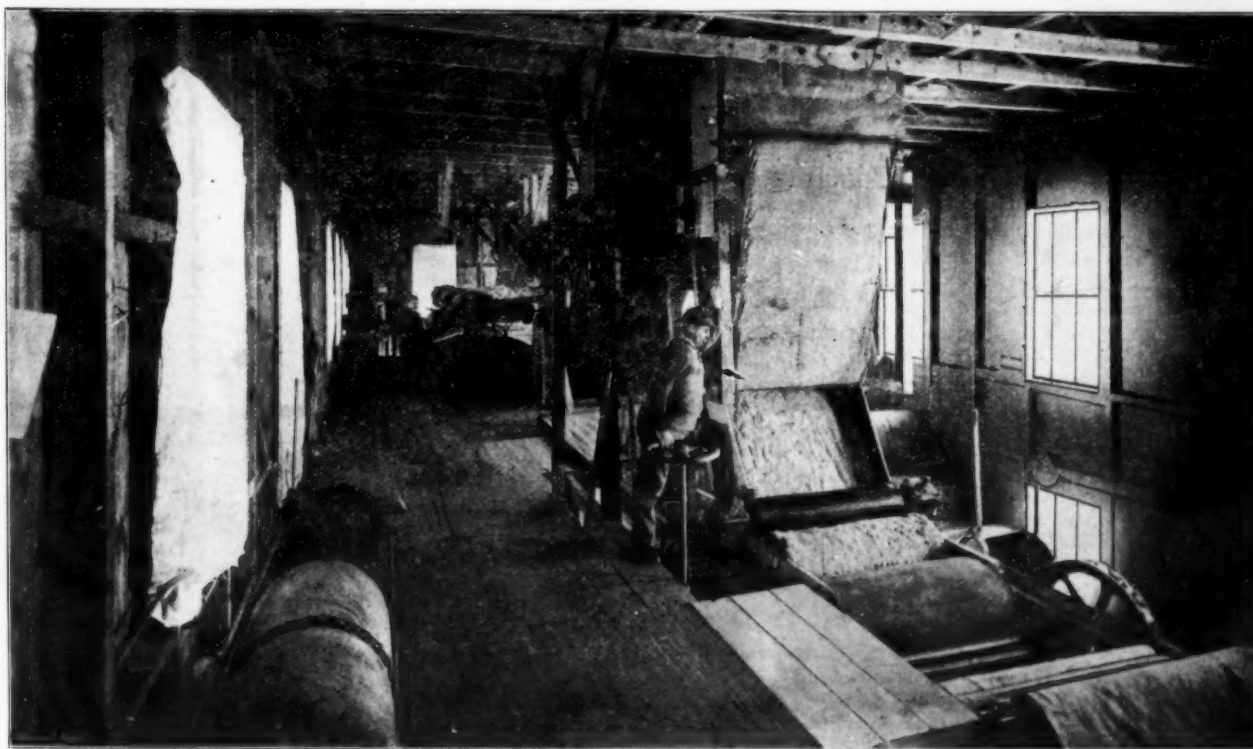
form bat, which is wound into a round bale like a roll of carpet. Thus the cotton may be compressed, without breaking a fibre, to any density desired, say thirty-eight pounds to the cubic foot. In this operation any sort of false packing is impossible. A "mix" would show at the ends or heads of the cylinder. Wet cotton would stop the machinery, as would the introduction of any foreign substance.

How the New Bale Is Sampled.

In the earlier stages of the evolution of the cylindrical baling system one of the most loudly-predicted difficulties re-



EXPERIMENTAL STATION AMERICAN COTTON CO., CHICAGO HEIGHTS.



INTERIOR EXPERIMENTAL STATION.

come, and the cores, instead of having to be knocked out with sledge hammers, are removed in a few seconds by an arrangement which is, in itself, a marvel of easy simplicity.

In some of the illustrations accompanying this article the earlier plan of covering is shown, as in the one where the new round bale and the old square one stand in contrast side by side. This sys-

tem of covering has been superseded by an ideally simple and serviceable novelty in that line, into which the entire bale is slipped by one additional revolution the moment it is finished, and automatically bound. One of the beauties of this style of covering is that either end of the bale may be easily exposed for sampling or examination by the mere loosening of a string.

lack of uniformity in the old square bale became so great that an act of Congress was talked about in order to compel uniformity in both weight and dimensions, and, indeed, the earlier cylindrical bales failed to remedy that difficulty. But with the perfected new gin press the length of every bale will be exactly the same, as well as its diameter; the first will probably be fixed at four feet and

lated to sampling. "How are you going to draw a sample from a round bale made by winding up a bat so tight that its density will exceed that of any compressed bale?" This question was propounded as a poser to the promoters of the new system, but if the mere matter of sampling had alone stood in the way a magical change would have been inaugurated from Virginia to Texas the moment the

improved press was perfected, a change which certainly, in respect to sampling, would have met the cordial approbation of the spinners of both hemispheres. And right here it may be remarked that the abolition of the old sampling system will, it is estimated, save in itself from 30,000 to 40,000 bales now lost to the growers through various "wastages" and purloinings.

The new cylindrical bale is sampled simply by drawing a proper sample from the bat on its way from the "condensers" to the revolving bale. By the system adopted absolute uniformity of the bale

ing, 1st, number of bales in each cargo as per manifest; 2d, number of pounds of loose cotton; 3d, the number of "no-mark" bales, and, 4th, brief remarks on the general condition of each cargo.

In order that the uncommercial reader may understand the terms and phrases of this story it may be explained that "no-mark" bales are those from which all marks have been obliterated and perhaps most of the bagging has been torn off, leaving shapeless lumps, unworthy to be called bales, while "loose" means cotton literally "lying around loose." Both this loose cotton and the "no-mark"

mixed with that of Capenor; owing to this the 'no-marks' have not yet been delivered three months after arrival of ship, entailing heavy expense."

The Rotherfield carried 7112 bales. Of these, 543—twenty more than the Lucina brought—were landed as "no-marks." There were found 1420 pounds of loose, besides (I quote the official report) "twenty-five plucked bales, while seventy deck bales lost overboard," and the apportionment was delayed pending settlement for the latter, entailing heavy expense.

The City of Belfast, carrying 5051 bales, brought 343 "no-marks," besides

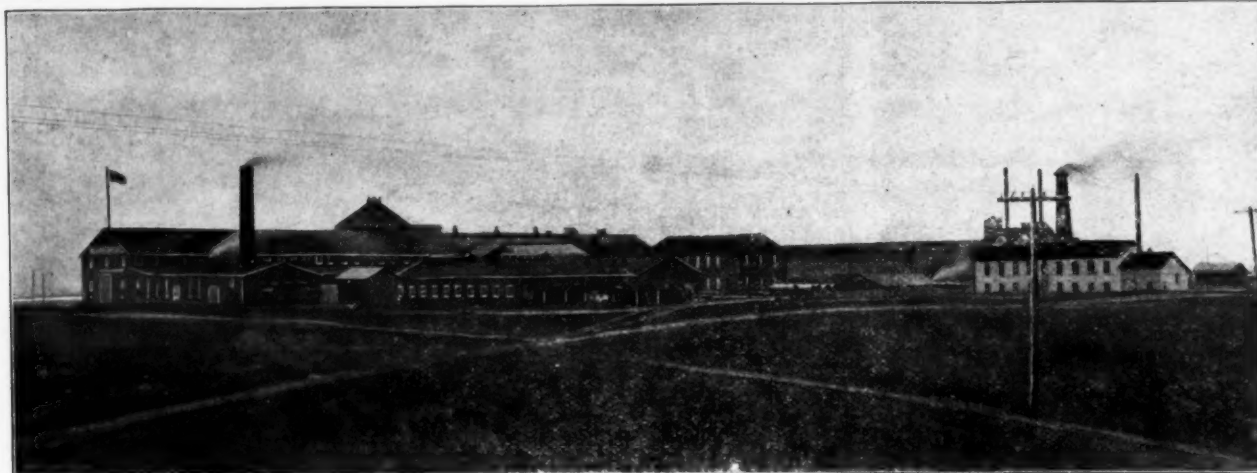
but will be cut short with this final quotation from the official report: "Besides the above 'no-marks,' thousands of bales had to be put on one side, owing to the almost complete obliteration of marks and brands, and had eventually to be identified with great labor and trouble by any remote clue to ownership left on them. The above cargoes consisted of 395,129 bales of cotton, of which those left on the quay with absolutely no mark or with wrong mark amounted to 7351 bales, or nearly 2 per cent."

The Significance of the Foregoing Facts as Shown by Our Foreign Consuls.

All this will be new to a majority of those who read this article, and especially to the farmers on whose shoulders all these losses ultimately fall. It is to be hoped that this one narrative will help to arouse them to a realization, from a standpoint of self-protection, to the necessity of concentrated action on their part in favor of a change. The significance of the foregoing facts, which are official and indisputable, may be made still clearer by looking into some of the consular reports recently received by the Department of State at Washington. One of the most carefully prepared among these, though they are all of like tenor, is that made by Consul Nettles, of Trieste, Austria, in which he states that, under the existing hodge-podge way of baling, American cotton has a disadvantage of not less than 3 per cent., quality for quality, in competition with cotton from other lands!

"American cotton," says Consul Nettles, "comes in worse condition than any received at this port. * * * The jute casing is torn and the cotton exposed to mud, water, rain, theft and fire. The bands easily come off, one, two, sometimes more, being frequently loose or broken; the cotton bulges out and more easily absorbs water, takes up dust and loses with every handling. The Indian and Egyptian cotton, on the other hand, usually come in good condition, neat and trim."

Referring to the conditions indicated in the Liverpool report, as manifested at Trieste, the consul makes this contrast: "It is almost impossible to decipher the



AMERICAN COTTON CO.'S MANUFACTURING PLANT, CHICAGO HEIGHTS, LOOKING NORTH.

is assured and guaranteed by the company. "A wayfaring man" may see at a glance how such a sample will prove truer, fairer and more reliable than samples drawn the old-time mutilating way.

Moreover, there is pasted on the outside of every bale a memorandum of its grade and quality, which is likewise in effect a guaranty that the cotton shall come up to the sample drawn as just described, as well as that the bale is free from false packing of any kind. This sample is divided into two equal portions, both tagged with the number and mark on the bale. One is kept by the company; the other is sent to the buyer or consignee. Thus an absolutely substantial guaranty, good as gold in every market, will follow the cylindrical bale to the four quarters of the earth, and there will be no mixing up, never an unidentified "no mark," never a pound of loose to be apportioned and worried over when cargoes arrive in foreign ports. The approval of the great cotton commission houses has already been given to this method of sampling, which was made a feature of a recent private circular issued by Henry Hentz & Co., of New York. Still, should a new sample be desired at any time it may be taken from a cylindrical bale the same as from any other. A sharp knife will do the work in two seconds. This was shown just before the bonfire test was made in St. Louis on January 20, which the writer witnessed in person from its beginning to its end. But that is another story to be told directly.

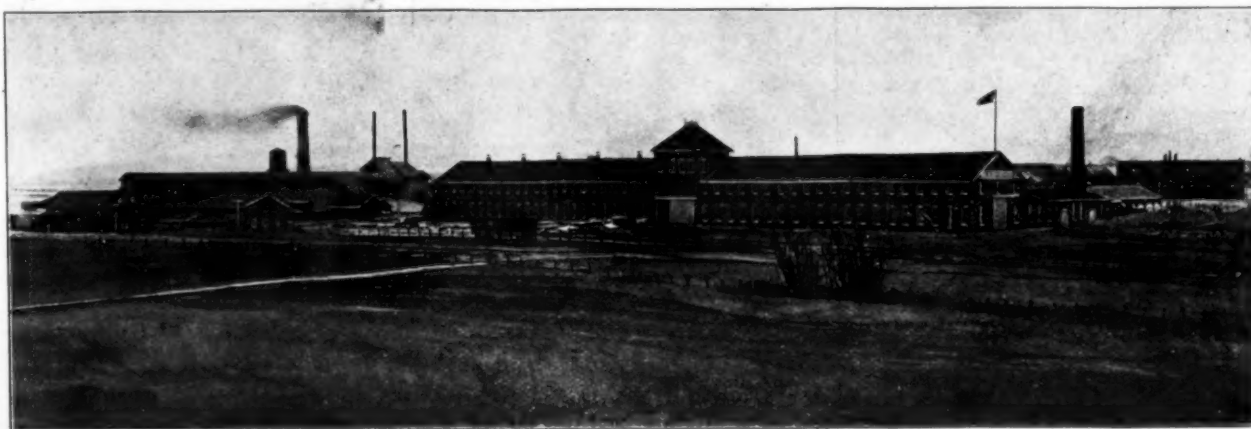
Some Very Striking Facts About the Condition of Cotton on Arrival in Liverpool.

A comparison of the old way with the new system develops many singularly striking contrasts. On the one hand, cleanliness, tidiness, economy; on the other, conditions of shocking commercial and industrial atrocity, involving everything conceivable that is vicious. Perhaps a good point to begin with in considering these is on the quay at Liverpool. There lies before the writer a report issued by "The Liverpool Cotton Association, Limited" on the cotton cargoes landed by ships from Galveston, Texas, during the season of 1894 and 1895, giv-

bales, after all sorts of harassing efforts to identify them, are finally apportioned among the consignments that remain identifiable.

Sixty-two cargoes are covered by this report. Let us take a look at a few of these on arrival at the quay. The Lucina had on her manifest 6619 bales, of which 523, or nearly 8 per cent., were unidentifiable "no-marks," which had to be apportioned or pro-rated without any reference to quality or staple among the various consignments of which the cargo consisted. These "no-marks" might have been the particular bales whose quality was most superior, whose "staple" was the very longest in the entire cargo, but the consignee of, say, 10 per cent. of the very worst bales that

6000 pounds of loose. The Rounton, with a cargo of 6259 bales, laid on the quay 449 "no-marks" and 2480 pounds of loose, part of which was required to make good eighteen plucked bales. One bale from the South Gwalia broke out in flames on being landed. The Hannah M. Bell's cargo is reported "very rough, in bad condition, badly torn, bands broken, ends stripped, many plucked bales, about six tons loose and (as is remarked very frequently in this report) nine cwt. loose warehoused to make up plucked and 'no-mark' bales." The Clanayron brought 250 "no-marks," 2600 pounds loose, eliciting the following remarks: "Rough, badly marked, a number of wrong marks, the apportionment of 'no-marks' delayed by wrong marks;



AMERICAN COTTON CO.'S MANUFACTURING PLANT, CHICAGO HEIGHTS, LOOKING SOUTH.

arrived got, in the apportionment, his 10 per cent. of the high-class "no marks" all the same. On the other hand, it may have been that these 523 "no-marks" were the very vilest cotton that ever goes to market; in that case the spinner who happened to be the consignee of the pick of the cargo had to take his share of them whether he had any use for that kind of cotton or not. The same disposition is made of "loose," except where it is warehoused to make up "plucked bales," with mentions of which the remarks accompanying this report abound. In the Lucina's case these remarks were as follows: "Many wrong marks; cargo

heavy expenses running on."

The cargo reported as in the best condition was that of the Maritime, which had only fifty-six "no-marks." The Sandfield's cargo, another relatively good one, was thus reported: "Three plucked bales, seventy-five deck bales badly damaged, some wet and coal-stained from the bunkers." The St. Giles landed seventy-five "plucked," with 291 "no-marks." The Dulwich landed "250 'no-marks' and a lot of bales ship damaged. Owing to wrong marks, apportionment of 'no-marks' delayed seven weeks."

This tale of woe might be extended into sixty-two chapters, one for each cargo,

marks on the American bales, and great confusion and trouble arise therefrom. The marks are well nigh invisible on the coarse covering. On the other hand, the Indian and Egyptian cottons come well and closely covered and wrapped snug and tight. The bales are clearly marked on the sides and on both ends and are easily identified, and the mixing of bales seldom occurs. The bales are of uniform size and are more compressed than the American, and thus expense is saved in ocean freight, storage and charges for transportation to the interior. The varying size of American bales adds to the expense by preventing compact, close

storage exactly wagon receive, o bales of five to the com for Indi gives a to 10,00 of Indi fer Am deal in to hand

bales of will reve joyed by them to The r Chancell virtual Trieste. Bremen America ghan, re tuated t or lack spinners compress James I the prac vessel n them fit to a dis imposed of the fl condition Consul America with its flowers, masses women like flies more An in that Barcelon way, bec claim ex various which in American The St what ma of hund that have partment the follow "Ameri world in cotton co may be, better sh The New The nee

storage. Buyers in the interior know exactly, in ordering Indian cotton by the wagon (car) load, how much they will receive, one wagon (car) holding fifty-five bales of Indian, as against only twenty-five to twenty-eight American. This, at the comparative weight of 410 pounds for Indian and 500 pounds for American, gives a freight advantage of from 8000 to 10,000 pounds per wagon-load in favor of Indian cotton. Though spinners prefer American, and buyers would like to deal in it more, it is at present as easy to handle 2000 bales of Indian as 200

can spinner's point of view is scarce less imperative. This is pointed out in an article on the cylindrical cotton bale, which appeared before the new press was perfected, in the Industrial Record, of Boston, devoted to the textile industry, and edited by Henry C. Kittredge. The following paragraphs taken from this may be regarded in the light of disinterested, impartial testimony:

"One of the largest users of cotton in New England, who has experimented very considerably with this bale, informed us this week that whatever criti-

nary bale, which every receiver of cotton knows.

"The introduction of this round bale of cotton, which enables the moving of 100* bales instead of fifty bales in the same freight car, will bring the cotton-fields or the raw material that much nearer the consumer or the Eastern mills. Surely this will, in this way, be of enormous benefit to our New England manufacturers."

What Some Other Papers Have Had to Say.

Says the Boston Globe: "Cotton men think it will in a great measure revolutionize the exporting business." This view is concurred in by the Boston Journal in the following language: "It is likely to work a revolution in the manner of preparing cotton for the market." The Manufacturers' Gazette, of Boston, sums up the favor with which this departure is being received in these words: "Only one expression, and that very generally favorable to it among cotton manufacturers."

Looking southward for press opinions, the conservative Mobile Register is found making the following exclamation: "No false packing, no wet packing, no dust and dirt in the cotton; no space given to air in cylindrical bales, which can be loaded aboard ship with saving of expense of screwing; can be handled by one man; no loose cotton in warehouses or on shipboard, incombustible, and with a direct saving of about \$4 per bale in the expense of covering, handling and shipping." The alert Houston Post predicts that it will be "only a question of time before all compress machinery is brought under the roof of the ginhouse." Home and Farm, of Louisville, an eminently agricultural journal devoted to the South, speaking of the present system, says: "It must be changed in order that the farmer in the field may receive a far greater portion than heretofore of the price paid by the manufacturer." In a discussion of ways and means whereby this wrong may be righted, the same authority said, among other things, that this cylindrical system will greatly reduce the cost of handling. The president of the Galveston Cotton Exchange has put himself on

of millions of dollars now annually lost through fires. Its non-combustibility is no longer a debatable theory, but an established condition. The existing situation is shown in the following expression from the New York Marine Journal: "The record of cotton fires during the past season shows an alarming state of affairs, and presents very forcibly the fact that American cotton is unsafe and unsuitable to handle under the existing methods." It was Mr. Edward Atkinson who first suggested that on account of its non-combustibility the new cylindrical bale be christened "the underwriters' bale."

More than a year ago a fire test was made at Waco, Texas, by a committee of the Southeastern Insurance Association, one of whose members was Mr. Charles Janvier, president of the Sun Mutual Insurance Co., of New Orleans, whose conscientious reliability it happens that the Manufacturers' Record is in a position to vouch for. In making this test lighted matches were first tried, but these produced no ignition whatever. Then shovels full of live coals were piled on top of a cylindrical bale, but these failed to set fire even to the covering. Next a burning brand was laid alongside and left burning for an hour. This burnt the covering only at points of contact, but produced no blaze. "This," so stated the report signed by Mr. Janvier and also by Mr. Clarence F. Lowe, "demonstrated that the 'flash hazard' is entirely removed by this system of baling so long as the covering is intact. The 'flash hazard' is the worst we have to encounter in cotton, and we believe is largely due to the using of the present jute covering."

"The tendency of fire to eat inwardly in a bale," the report continued, "so that it may be burning at its core and often reduced to a mere shell (by internal combustion) without any evidence of the presence of fire, is the next greatest hazard. In the cylindrical bale there is probably not enough oxygen inside the first layer (and there must be less and less toward the centre) to support combustion, because nearly all the air is pressed out of the layers before being



INTERIOR OF MACHINE SHOP.

bales of American." The round bales will reverse all these advantages now enjoyed by Indian and Egyptian and turn them to the American growers' profit.

The report sent in by Consul C. W. Chancellor from Havre, France, is a virtual reiteration of the report from Trieste. Consul Hugo M. Starkloff from Bremen emphasized the excessive tear on American bales. Consul J. C. Monaghan, reporting from Chemnitz, accentuated the evils of the present covering, or lack of covering, and a demand from spinners all over Germany for closer compressing and better baling. Consul James E. Neal, of Liverpool, deplored the practice of screwing bales into the vessel and cutting their ends off to make them fit into the hold. He also referred to a discriminating underwriters' tariff imposed on American cotton on account of the flimsy covering and general ragged condition.

Consul Herbert McBowen reports that American cotton arrives at Barcelona with its ends looking like huge cauliflower, while pilfering from these ragged masses "is almost reduced to a trade, women and boys hovering around them like flies around honey." He reports that more American cotton would be taken in that market if better baled. Many Barcelona brokers, however, like the old way, because it gives them chances to claim excessive shortages and to put in various other unwarranted demands which inure to their private profits at the American planters' expense.

The St. Louis Globe-Democrat prints what may be considered the substance of hundreds of similar expert reports that have been received by the State Department on this subject, summed up in the following extract from one of them:

"America is the laughing-stock of the world in this respect, for there is not a cotton country, no matter how poor it may be, that does not ship its cotton in better shape than the Americans."

The New Bale Favored by American Spinners.

The need of a change from an Ameri-

cism might be brought against it, it is far less objectionable than the ordinary bale from whatever point of view it may be looked at. The sincerity of this manufacturer's opinion was subsequently demonstrated in his placing an order for the purchase of more cotton baled in this fashion.

"With the cylindrical bale it can readily be seen that false packing is among the impossibilities, and uniformity of grade throughout the bale is practically assured. Anything defective in the grade or character of the cotton can be easily observed by the examination of either end of the bale, and, as anyone can see, both ends of the bale must be alike.

"We have conversed with a number of manufacturers who are using this form of bale, and the universal expression is greatly in its favor. We have yet to hear of any adverse criticism more than that the compression at the centre is so much greater than at the circumference that it requires severe mechanical means for the breaking up or separation of the cotton at the core. This defect, however, has been overcome, we are informed. At any rate, we can see no reason why it should not be, with the proper application of the principles represented in the machine that was exhibited at the Atlanta Exposition.

"The compression of cotton to the density of thirty-eight instead of twenty-three pounds to the cubic foot, which is the comparative density of the new and old bales, has advantages that any manufacturer can readily see in the way of less cost in transportation on the cars or on the dray, as well as of insurance. More bales can be put into warehouses than formerly, which is an item of no small moment.

"The covering that is put about the cylindrical bale has advantages over the old jute bagging in more ways than one, not the least of which is the fact that all marks are legible and remain so from the initial point of shipment to destination. This is not the case concerning the ordi-



INTERIOR OF FOUNDRY.

record in the following words: "Complaints from commercial bodies and individual consignees as to the ragged and disgraceful condition in which American cotton is being discharged at seaports and mill ports have become so loud and general that concerted action should be taken by cotton exchanges to reform the present methods."

How Fire Risks Are Reduced.

The cylindrical bale means the saving

*On January 19 an Illinois Central car loaded with 160 bales was shipped from Jackson, Tenn.

rolled into the bale. If we are free from these two hazards, we are rid of the two greatest elements of risk attached to our business."

This report refers also to the reduction of the "picker" hazard in cotton mills, and expresses the opinion that the fire hazard is also reduced by the fact that the new bale renders impossible the vast accumulation of loose cotton now found wherever cotton is handled. In fact, there need be no loose cotton at all, either in warehouses or on platforms or anywhere else, when the new bale comes into general use.

The St. Louis Fire Tests.

As has been stated, the writer visited St. Louis expressly for the purpose of witnessing a test so crucial that the bale may be said to have passed through a veritable fiery furnace, from which it emerged practically unscathed. There were great armfuls of faggots and of split-up dry-goods boxes, saturated with coal oil, placed under and all around and on top of this round bale, which had been raised up off the ground about a foot in order to give the flames full play. Moreover, a quantity of coal oil was thrown on the ends and poured all over the bale, so as to make sure of igniting the outer covering. There was present quite a

lied upon all over the world for cotton facts, argues—and most conclusively—that the losses inherent in the present way of putting up what Mr. Edward Atkinson has termed “the most barbarous, unsafe and wasteful package known in commerce,” fall chiefly upon the cotton-growers of the South. Therefore they are the people to whom every consideration of interest, every instinct of self-protection, should prompt to welcome and to help inaugurate such a boon to them as the cylindrical bale will beyond peradventure prove. It is worth while to linger a little over a report made by Mr. Shepperson. “Spindles,” says he, “cannot spin dirt, nor trash, nor grease,

comments on the official report of the Liverpool Cotton Association.

To some closer home, Mr. Shepperson points out how, by the present method of compressing, on account of the shifting and shortening of bands and the removal of bagging, there is a loss at the compress to the grower of an average of three pounds a bale, while the loss from handling alone at the compress is figured out at least another pound. On this basis, the farmers lost during the season of 1894 and 1895, through what is but a comparatively little leak-hole, cotton that had a money value of \$2,100,000.

Mr. Shepperson and Mr. Atkinson are, however, not the only experts who take the position that the old bale is doomed. I have before me a number of letters from New England cotton manufacturers, representing fifteen mills, whose spindles in the aggregate reach into the millions, who unqualifiedly endorse the new departure and confirm what Editor Kittredge has said about cylindrical bales commanding higher prices that can be paid for cotton packed in the old abominable way.

As an example of Southern sentiment on this subject, among many favorable expressions, the following, from Mr. John Hill, a prominent insurance expert of Columbus, Ga., was addressed to Mr. Edward Atkinson, in which he says:

“I have read with great interest the papers concerning cotton baling which you kindly sent me. Knowing the very great investment in gins, presses and compresses throughout the South, I at first thought, in connection with the idea of doing away with all these and introducing entirely new apparatus, that a formidable obstacle would be presented. But further investigation and thought have led me to believe that at an early date the necessary changes, at least in the method of baling, will be a financial necessity which cannot be avoided, either by the planters, factors or compress owners.

the epitaph of the French burr-stone was written. The roller found a profit from the waste of the burr, and the middlings, once a poor product, became one of the finest and best. Who now grinds wheat into flour on French burrs? All those who attempted to withstand the advancement pitted themselves against the inevitable, and have long since gone into bankruptcy. I think I can see the same future awaiting the millions of dollars invested in presses and compresses.”

Showing the Lessened Cost of Handling from a Railroad Standpoint.

As Mr. Hill thus shows, wide-awake representatives of no interest can long afford to cling to the old and bad when once the new and good begins to demand recognition. It is the part of real wisdom to take the initiative in getting in line with the inevitable, instead of waiting to be crushed by useless resistance. The writer has been told by one of the most sagacious of Southern railway presidents that within less than two years the railroads would be found actively favoring the new baling system. However, in writing this short and simple story, instead of quoting a railroad president, I will borrow the words of a plain, every-day station agent, who, down at Temple, in the State of Texas, is employed by the Gulf, Colorado & Santa Fe Railway. In a letter to Mr. L. J. Polk, general freight agent of that railroad, Mr. Craig Hunter, the station agent referred to, wrote in part as follows:

“You must realize that it has only been a few years since electric lights, electric cars and the telephone were invented, and considering what these inventions have done, it is not only possible, but probable, and, in fact, certain, that the cotton industry should also advance; and while I recognize that this new system will be bitterly antagonized by the bagging, tie and other interests, at the same time the saving of from \$2 to \$4 per bale means from \$4,000,000 to



ILLINOIS CENTRAL CAR CONTAINING 160 CYLINDRICAL BALES.

company of cotton men, bankers and other prominent people as witnesses to this ordeal.

Just before the match was applied one of the members of the board of underwriters took a big bottle of coal oil and kept pouring it on until the fire was blazing high, thereby causing considerable anxiety to the spectators lest it should explode in his hands. There was a regular bonfire, and the bale was literally hid and lost in flames. At the end of twenty minutes it was unrolled so as to leave spread out, on the live coals, the outside bat for the distance of about six feet. The inside of this bat showed up as white and unsullied and unscorched as on the day it was first evolved from “the condenser.”

One of the insurance men had an iron rod, the end sharp like a prod, with which he from time to time dug into the bale while the woodpile was burning, but even this did not enable the fire to eat into the bale as much as half an inch. When the six or eight feet of bat were unrolled and left spread out over the coals, it was in turn prodded and opened up, and in this way alone was there produced any considerable combustion of cotton. The ends of the bale were charred somewhat, but quickly ceased burning when the coal oil had been consumed.

Again, after the first fire had entirely gone out, the bale, from which the outer bat had been stripped off as above described, was again covered with combustibles, which soon blazed high and hot; and when this second fire had somewhat subsided several bucketfuls of water were poured on the bale and more of the bat unwrapped. This disclosed the fact that only the surface was wet, the inner part of the flooded portion of the bat being found dry as tinder. Afterwards the unharmed part of the bale was weighed, and the net loss was found to be only 11 per cent. Thus was the right of this bale to be called “the underwriters’” again abundantly established.

The Value to Farmers of the New System.

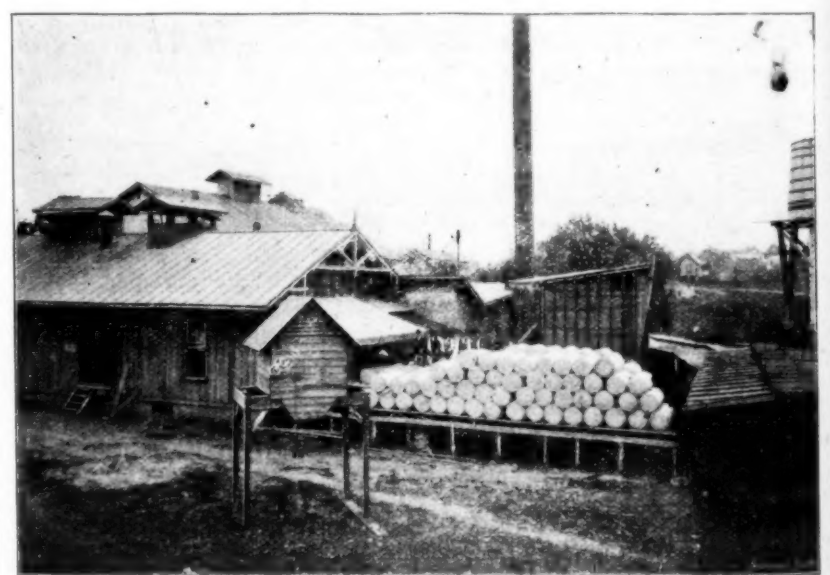
But, after all, as the main beneficiaries of the cylindrical bale will necessarily be the cotton-growers of the South, it would not be inappropriate to name it “the growers’ bale.” So eminent a cotton authority as Mr. A. B. Shepperson, re-

nor water, any more than they can spin the cotton stolen from wretchedly-covered bales. These matters are taken into consideration in the price spinners are willing to pay for cotton.” Here is but another proof that every charge upon cotton, from its departure from the gin-house to the machinery in the mills, means the multiplication of the sweat drops that fall from the farmer’s brow.

There have always been found interested men resisting every improvement, and there have already appeared throughout the cotton country those who are trying to prejudice the farmer against the new bale by calling it a monopoly (which it is not and never will be), and by declaring that the American Cotton Co.’s plan of operation will be accompanied by enormous profits. None of these gentlemen, however, go to the trouble of explaining that the farmer will necessarily be a sharer in these enormous profits. He is not, however, a sharer in any of the profits of the army of “middle men” who are now engaged in this effort to throw dust in the farmers’ eyes in order that they may continue to fatten on the farmers’ labor. To the unprejudiced, impartial observer of the situation the conclusion is unescapable that, as it is to the interest of this organization to divide its profits with a class whose co-operation will so greatly facilitate the organization’s success, the planting classes will soon recognize that this alleged monopoly is their ally, and not their enemy. This question is given further consideration in some correspondence between Mr. D. C. Ball and the president of the Farmers’ Alliance of the State of Texas, a few extracts from which will be given directly.

The New Bale Means Higher Prices to the Growers.

As Mr. Shepperson has shown, spinners have a limit, based on the prices of yarns and fabrics, which determine the amount they can pay for the cotton itself. In the Liverpool market 6 per cent. is deducted from the sum British spinners are willing to pay for the cotton to cover the cost of ties and bagging alone. Another considerable percentage is now in effect taken off to cover the losses from plucked bales, and the delays, confusion, wear and tear resulting from “loose” and “no marks,” as explained in the preceding extracts and



AMERICAN COTTON CO.'S PLANT AT WACO, TEXAS.

“The march of improvement in machinery,” Mr. Hill goes on to say, “has been as a destroyer of the old and must so continue. Just as central gin and baling plants have during the past fifteen years gradually driven out the small local ginhouses of the plantations, so that now a large percentage of the cotton grown in the South is ginned and baled in these custom-ginneries, so must the cylindrical press supplant the old compress.

“I remember well the French burr millstone, with which our wheat was ground to flour in our younger days, and the hundreds and thousands of flour mills which then used them; but when the gradual reduction roller mill appeared,

\$8,000,000 to the Texas farmer, representing from 5 to 10 per cent. of his total revenue, based on this year’s prices, and from 10 to 20 per cent. based on last year’s figures, which shows where the farmer will stand on this side, and the spinner on the other, demanding the cylindrical bale, and that all antagonistic interest must and will retire.

“I have tried above to show you why it is to the interest of the farmer and the capitalist, and will, as briefly as possible, demonstrate why, you in your official position cannot afford to antagonize, but in fact must, in justice to yourself and the company you represent, break loose from old idols, throw them away as so

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much rubbish, and assist in introducing the new. To illustrate, say that we have sixty bales cotton at Lampasas, to be concentrated at Temple for compressing; your ordinary or average car will hold but twenty bales of flat cotton; say you decide to bring these sixty bales cotton to Temple in one car, which is a fair illustration in the cotton season. Now watch the movement of this car (admitting that the car is at Lampasas, which is hardly probable):

	Miles.
Leaves Lampasas with 20 bales cotton for Temple.....	56
Returns to Lampasas.....	56
Leaves Lampasas with 20 bales cotton for Temple.....	56
Returns to Lampasas.....	56
Leaves Lampasas with 20 bales cotton for Temple.....	56

Total, 60 bales cotton..... 280

"Now, if these same sixty bales had been Bessonette cotton, all could have been loaded in one car, with a total mileage of fifty-six miles.

"Again, your engine rating on Lampasas branch, east of Goldthwaite, is from sixteen to eighteen loads, and as two empties are treated as one load, the car showing a mileage of 280 miles equalled exactly four full loads in hauling these sixty bales cotton to Temple. Even allowing your maximum of eighteen loads to a train, with your twenty bales cotton to a car, and only sixteen loads with the sixty bales, it will be no trouble for you, with the figures which you must have in your office, showing cost per train-mile, etc., to determine exactly what the saving would be to your company in a season.

"You may say this car did not return empty to Lampasas each trip, but if this one did not, you know, during the cotton season, others did; for in fact at least 90 per cent. of cars going west on Lampasas branch during the cotton season are empties, going out for no other purpose than to be loaded with cotton or its products.

"Again, leaving out the great saving as demonstrated above, do you not realize that car famines, which exist every average cotton season, are expensive not only to the roads, but to shippers and all connected with the business? Also, that cotton as now ginned, or even compressed, is almost as combustible as powder, while the Bessonette bale cannot be burned, making insurance a minimum; in fact, nothing to speak of. Realizing all these things as you must, I cannot understand why any man can doubt what the result must and will be."

After a full study of the round-bale system, of what has been accomplished in preparing for its introduction, and of what this impending revolution in cotton handling means for the South and for the people of this section, the writer can only express his surprise that such a change has not come about before this. A hundred years have passed without a change of any importance in the system of cotton handling. This new system means an advance of far-reaching importance, the full value of which can hardly be overestimated.

The Louisiana Sulphur Deposits.

General Manager Frasch, of the Union Sulphur Co., Sulphur, La., writes the *Manufacturers' Record* as follows: "We now are pumping daily the sulphur from one of our wells, and are shipping the product to New York city. We are also drilling in new wells in order to increase our capacity."

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving the character of the machinery needed.

Improvements in the Louisiana Rice-Growing District.

Crowley, La., February 7.

Editor *Manufacturers' Record*:

The Crowley Canal Co., Limited, has been chartered by W. W. Duson, president; Miron Abbott, vice-president; C. C. Duson, treasurer, and C. L. Crippen, secretary, with capital stock of \$25,000. The new company acquires the irrigating plant and canal known as the Duson canal, lying north of Crowley. The present canal is about five miles long, and is equipped with a 16-inch Ivens pump, which throws 15,000 gallons of water per minute, and 150 horse-power engine, with a battery of two 125 horse-power boilers. It is the intention of the new company to double the capacity of the old plant, putting in another pump of the same capacity and more engine and boiler power. The canal will be extended some four or five miles this winter.

Among other improvements which may be mentioned in this section is the building of a large irrigating plant and canal eighteen miles southwest of Crowley by Mr. Silas Trickey, of this place. His plant will be of about the same size as the present Duson plant; the canal will be four and one-half miles long this season. This irrigating plant will be situated on the Bayou Que-de-Tortue, three and one-half miles below the Vermillion Irrigating Co.'s plant, which is the largest irrigating plant in this section of the South.

The firm of Abbott Bros., who were the pioneers in the irrigating business in this section, and who already own and operate a canal nine miles long, with two 15-inch Morris pumps and two 150 horse-power engines, contemplate enlarging their system whereby they will nearly double their capacity.

Arrangements are about perfected for a large saw mill to be located in Crowley. Logs will be shipped over the Midland Branch Railroad and Southern Pacific lines a distance of ten miles. This plant will consume pine and cypress, and also hardwood timber, such as oak and hickory, for wagon building.

A large amount of work is being done on the streets of Crowley, putting them in first-class condition.

W. W. Duson & Bro. have recently platted a new addition to the town of Crowley, to be known as South Crowley. This plat lies on the south side of the Southern Pacific Railroad, is beautifully drained by the Bayou Blanc, and already a large number of streets have been graded and sidewalks built and things put in first-class shape for a public sale, which will be held in the early days of April. The success of the town of Crowley, starting as it did when this section of the country was entirely new and unsettled, and the remarkable success of the Northern people who have located here, warrants the Messrs. Dusons in anticipating a lively demand for property in the new addition. Never in the history of Crowley have more people located in the place in the same length of time than have arrived here during the past thirty days, there being something like fifty acquisitions to our population in the past few days. Merchants report an active trade and prosperity general.

Our people are jubilant over the decision of the ways and means committee to report favorably upon the restoration of the McKinley duty upon rice, with the maintenance of the present definition under the Wilson bill of the cleaned product.

C. L. CRIPPEN.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

Charleston & Western Carolina.

A dispatch from Augusta, Ga., states that the Charleston & Western Carolina Company has secured land in that city for shops which the company proposes to erect. It is also announced that the management has purchased a quantity of rolling stock, including thirteen locomotives, eighteen passenger cars and 300 freight cars. This is in line with the announcement made some time ago in the *Manufacturers' Record* that it was the intention of the present owners of the road to make extensive improvements.

The Portsmouth Belt Line.

The statement in the last issue of the *Manufacturers' Record* relative to the proposed belt line in the suburbs of Portsmouth is confirmed by the following letter from Vice-President W. A. Patton, of the New York, Philadelphia & Norfolk:

"I beg to say that our company has recently purchased a terminal property at Port Norfolk, and it is our intention, as soon as arrangements can be completed for the same, to construct a belt line, which would be some three or four miles in length, for the purpose of connecting all of the existing railroad lines in Portsmouth and Norfolk. We have not yet formulated definite plans for the improvement of our terminal property."

Mobile, Jackson & Kansas City.

The recent annual meeting of the Gulf City Construction Co., which is building the Mobile, Jackson & Kansas City line, resulted in the election of the following officers: F. M. Stratton, president; S. F. Parrott, vice-president and general manager; H. H. Lane, secretary and treasurer. Mr. Parrott succeeds F. B. Merrill, who has been president of the railroad and general manager of the construction company. Mr. Parrott is well known in railroad circles, having built several railroads in Georgia and Tennessee. He built the Columbus Southern Railway, and after its completion became general manager, which position he held until the road was consolidated with the Georgia & Alabama Railroad on January 1, 1897.

Construction work is now in progress on a section of the line between Mobile and Dog river, twenty-eight miles. It is proposed to grade this portion first. Track is also being laid at the rate of half a mile daily, it is reported. As previously noted in the *Manufacturers' Record*, the road is to be completed from Mobile to Jackson, Miss., 164 miles.

Improvements at Port Chalmette.

According to advices from New Orleans, the New Orleans & Western Company has determined to considerably increase its facilities at Port Chalmette, and with that end in view will issue \$2,000,000 in second mortgage bonds. The sum will be applied, it is stated, to the erection of an additional compress. The wharves will also be widened, electric cranes will be put up along the wharves, sheds will be constructed, cottages built and other improvements made, including the extension of the track of the road in the port yard.

At the last meeting of the New Orleans & Western, held at the office of the road, the old board of directors was re-elected, with the addition of Messrs. E. H. Farrar and W. C. Dotterer, the present general manager of the company. At a subsequent meeting of the board of directors

Wm. Mason Smith was re-elected president of the company; W. W. Bierce, vice-president; D. B. Morey, secretary, and G. McD. Nathan, treasurer.

Vice-President Van Nostrand, of the New Orleans & Western Company, in a letter to the *Manufacturers' Record*, confirms the proposed bond issue and states that about \$750,000 will be expended in improvements during the coming spring and summer months.

A 550-Mile Texas Road.

A company has been chartered in Texas which is promoting a line to be built through the southwestern part of the State. It is called the Southwest Texas Railroad Co., and has a capital of \$550,000.

Among the incorporators whose names appear in the charter are H. H. Boddy, reported to be head of the firm of Boddy & McLellan, of New York; Charles Morrill, a New York manufacturer and brother of Senator Morrill, of Vermont; J. M. Gardner, said to be counsel for the New York Life Insurance Co., of New York, and Dr. James Kerr, of Washington.

D. Rodger, of the Manhattan Construction Co., of New York, is also one of the incorporators and engineer. In an interview he is quoted in the *Dallas News* as follows:

"Under the contract I am to begin work by the first of next April and build and equip the lines from Brenham to Brownsville, by way of Corpus Christi, on the Gulf, and from Corpus Christi to Eagle Pass, on the Mexican border, within eighteen months. Before filing our charter we made arrangements to place our bonds in London. In Texas our lines will extend through a large section of new country, and their total length will be about 550 miles.

"We propose to start at Brenham and build direct to Corpus Christi. From there we will build one line to Brownsville and another to Eagle Pass. After Brownsville is reached we expect to build on to Mexico City via Tampico, thus giving those cities railroad connection with the large cities of the North and East 400 miles shorter than any other route."

The proposed line will traverse the counties of Washington, Colorado, Fayette, Lavaca, Victoria, Refugio, San Patricio, Nueces, Cameron, Live Oak, McMullen, La Salle, Dimmitt and Maverick. Brenham, which is one of the proposed terminal points of the line, is on the Gulf, Colorado & Santa Fe and the Texas Central roads.

Railroad Notes.

H. P. Hathaway has been appointed general English agent of the Chesapeake & Ohio and its steamship lines, with offices at London.

L. R. Brockenbrough has been appointed general agent of the Baltimore & Ohio at Pittsburg. He succeeds T. W. Galleher, who, it is reported, is to be appointed to a position in the freight department of the road at Baltimore.

The Georgia Southwestern Railroad has re-elected the present officers, who are as follows: B. A. Denmark, Savannah, president; W. G. Raoul, J. F. Mims, W. R. Cox, J. M. Johnston, R. H. Brown, R. T. Wilson and F. B. Gresham, directors. John Walker was re-elected secretary and treasurer.

The transfer of the property of the City Railway Co., of Charleston, S. C., has been made to the Charleston Street Railway Co., which is building the electric line in that city. The price paid was \$150,000. The City Railway comprises about fourteen miles of track on

seven miles of streets. The price paid was \$50,000 more than its bonded debt.

From Trail to Railroad.—One of the most striking and attractive features of the year in descriptions of railroad routes is the illustrated article in the Review of Reviews for January, entitled "From Pioneer Trail to Vestibule Limited." It deals with the Queen & Crescent Route between Cincinnati and New Orleans, and describes especially the territory between the Ohio and Tennessee rivers, with reference to the historic battlefields not far from Chattanooga. The half-tone illustrations are of bits of scenery along the route, trackage, signal blocks and general equipment, and the whole, written in pleasing style, is an excellent index to railroad development during the past twenty-five years.

A Fine Water-Power.

Percy Sugden, Savannah, Ga., in a letter to the Manufacturers' Record, says:

"Twenty-five miles west of the city of Savannah, Ga., located upon an unnavigable river, is an excellent water-power of fully 10,000 horse-power. The river has a rock bed, with a fall of twenty-one feet in two miles, running through a stretch of high ridge country, which is well drained and perfectly healthy.

"This power forms an excellent opportunity for investment, either by converting it into electricity and transferring it to Savannah, or by locating a settlement on the site and using the power on the spot for manufacturing and other purposes.

"The opportunities for using the power in Savannah are great. With fifty miles of electric railways, electric lighting, etc., the daily increasing amount of machinery using electric power, the power could be disposed of readily and to advantage.

"As a site for a settlement it is unsurpassed. The location is healthy, good water in abundance, and only three miles from the Georgia & Alabama Railway. It is well wooded with pine, oak, ash and other Southern trees, and clay being abundant in the vicinity, building could be done at a minimum cost.

"The power was located by the late Major C. B. Warrand, who was preparing for its practical development at the time of his death."

Southern Textile Schools.

Commenting upon the establishment at Lowell, Mass., of a textile school, with a fund of \$75,000 from the city and the manufacturers, the Charleston (S. C.) Evening Post says:

"The mill presidents would be wise to investigate these schools in Northern cities and act together, perhaps, in founding one in South Carolina. If such schools are needed in the North, how much more are they needed in the South, where the industry is still an infant and skilled labor is scarce?"

It is much to be desired that this suggestion will be heeded. There is no reason why in time the South might not control the fine cotton goods manufacture, but that will not happen if dependence is placed solely upon natural advantages. If New England, after nearly a century of experience, finds it necessary to adopt the methods of England and to establish institutions for the development of operatives of the highest skill, the South should be no whit behind its Northern competitor.

The Business Men's Association of Newport News, Va., has been formed, with the following officers: J. M. Curtis, president; W. B. Vest, E. C. Hillyer, C. M. Braxton, vice-presidents; T. M. Benson, treasurer.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

LOOM INDUSTRIES UNITE.

The Crompton and Knowles Works at Worcester Made One.

[Special Cor. Manufacturers' Record.]

Worcester, Mass., February 16.

Important improvements and business extensions are expected from the combination in the last few days of the Crompton and the Knowles Loom Works, of this city. The consolidation of these two great concerns, with a capitalization of \$3,000,000, is an important event in the industrial history of Worcester, and will undoubtedly have much influence upon the future. For half a century the establishments have grown side by side; each has attained success and world-wide fame, and competition has been sharp. A union of forces has now been effected that will give strength and stability and will continue and further one of the largest industries in New England. The plan was suggested about four months ago by Mr. John A. Shibley, of Dean & Shibley, bankers, of Providence, New York and Boston, and his skill and experience made the negotiations successful.

On November 25, 1837, William Crompton obtained a patent on the first looms in the world for the manufacture of fancy cassimeres by power, and laid the foundation for this immense business. He was succeeded in 1849 by his son, George Crompton, who two years later formed a partnership with M. A. Furbush, which continued for eight years. From 1859 until his death, in 1886, Mr. Crompton carried on the business himself, making and acquiring by purchase many patents upon improvements, and being assisted by Horace Wyman and others in adapting the loom to every variety of textiles. One of the most noteworthy improvements was the six-quarter loom, made to operate at double its former speed, thus increasing production without deteriorating the quality of the goods. When Mr. Crompton died the business was incorporated, with a capital of \$500,000, and with his widow as president. She was succeeded in 1895 by her son, Charles Crompton.

Lucius J. Knowles was the founder of the Knowles Loom Works. He took out his earlier loom patents in 1856, public attention to his wonderful mechanical skill and ingenuity having been attracted by numerous patents in other mechanical lines, notably one for the well-known Knowles steam pump. With his brother, Francis B. Knowles, he began in 1862 the manufacture of the famous loom. Important improvements along other lines of loom construction were the natural outcome of the combined mechanical ingenuity and business sagacity of the two brothers, ably assisted by George F. Hutchins, the efficient superintendent of the company's works, with the competent executive management of those associated with them.

L. J. Knowles died in 1884, and in the following year the present corporation of the Knowles Loom Works was formed, with the surviving brother, Francis B. Knowles, as its president, the other officers being F. P. Knowles, vice-president;

C. H. Hutchins, treasurer; H. H. Merriam, secretary; J. M. Russell, cashier, and G. F. Hutchins, general superintendent, the capital stock of the company being \$600,000. In 1890 F. B. Knowles died suddenly of heart disease, and the present president of the company, C. H. Hutchins, was elected as his successor.

In 1883 the looms were introduced into foreign fields. The firm of Hutchinson, Hollingsworth & Co., Limited, of Dobbross, England, after careful and thorough investigation were selected as the most fitting representative of the foreign interests of the corporation, and that the selection was eminently wise has been substantially evidenced by the introduction by that firm into the leading mills of England and on the Continent of nearly 14,000 woolen and worsted looms built and constructed upon the Knowles plan, so that today the loom stands fully recognized as the best in the English market. In 1893 the Knowles Works acquired the business of the George W. Stafford Manufacturing Co., of Providence, R. I.

As soon as possible the details of the organization of the new corporation will be arranged, and the new management will assume control of the combined business. The new officers will be as follows:

President, Charles H. Hutchins, president and treasurer of Knowles Loom Works.

Vice-presidents, Charles Crompton, president of the Crompton Loom Works; Frank P. Knowles, vice-president of Knowles Loom Works.

Treasurer, George Crompton, of Crompton Loom Works.

Assistant treasurer, John M. Russell, cashier of Knowles Loom Works.

Secretary, Henry H. Merriam, secretary of Knowles Loom Works.

Sales manager, Justin A. Ware, treasurer of Crompton Loom Works.

General superintendents, George F. Hutchins, general superintendent of Knowles Loom Works; Horace Wyman, general manager of Crompton Loom Works.

Assistant superintendents, Randolph Crompton, of Crompton Loom Works; Charles Crompton, of Crompton Loom Works.

Solicitor, Charles M. Trayer.

Directors, the above officers, together with Dr. Homer Gage, George W. Stafford, of Providence, and Albert B. Wood.

Nearly a Mill a Week.

While the Northern cotton mills are shutting down entirely or working on short time in order to curtail production, the Southern mills are running night and day. Good reason exists for the belief that the South is to be the great cotton-manufacturing district of the United States, so far, at least, as the production of the coarse yarns and fabrics is concerned. Sixty-six cotton mills were built in the United States last year, and of this number forty-six were constructed in the South, while nearly every week chronicles the erection of a new mill.—Florida Citizen.

To Employ Colored Operatives.

A bill has been introduced in the North Carolina assembly asking for the incorporation of the Coleman Manufacturing Co., of Concord, N. C., its purpose being the erection of a cotton mill. The capital stock is placed at \$200,000. This company was first projected last spring by Mr. W. C. Coleman, a prominent colored lawyer of Concord, N. C., and endeavors will be made to ensure the success of the enterprise at an early date, so that the erection of buildings can be com-

menced. Colored labor only will be used in the operation of the mill when completed.

Hosiery Mills at Greensboro, N. C.

The George Manufacturing Co. has been fully organized at Greensboro, N. C., for the purpose of establishing a knitting mill. A site has been secured at the Fishing Mills, near Goldsboro, and water-power will be developed to run the equipment of the plant. An experienced man will have charge of the enterprise, and expects to have the mill in operation in a few weeks. The directors of the company are Albert George, C. Cone and J. W. Lindau; S. H. George is president, and Edgar George, secretary-treasurer.

Athens (Ga.) Cotton Mill to Expend \$100,000 Enlarging.

The stockholders of the Athens Manufacturing Co., of Athens, Ga., held a meeting on the 10th inst., at which some extensive improvements to their mills were decided upon. Bonds for \$100,000 will be issued and the proceeds expended in the purchase of new machinery and in making improvements to the cotton and woolen mill which the company is operating. The company's present capital is \$125,000, and its equipment consists of 10,000 spindles and 325 looms. Mr. R. L. Bloomfield is president, and G. H. Palmer, secretary, of the company.

Textile Notes.

The Gold Crown Hosiery Mills, of Charlotte, N. C., incorporation of which we noted last week, has a capacity at present of 350 dozen per day. The company has all machinery and equipment required at present, and will enlarge as the demand for its product increases. Mr. R. M. Oates, Jr., is treasurer of the company.

The Gold Crown Hosiery Mills, of Charlotte, N. C., is at present employing 100 hands and producing 350 dozen pairs of hose daily. This company has been in operation successfully for sometime, but only recently obtained charter of incorporation. Mr. R. M. Oates, Jr., is treasurer of the company. The capital, full paid, is \$22,500.

A report, as yet unverified, says that the Henderson Cotton Mills have increased their capital and intend to put in new machinery. It is stated that sufficient equipment will be added to increase the capacity by about 80 per cent. This plant was just completed during '96, and operates 5000 spindles. D. Y. Cooper is president of the company.

A movement is on foot at Carrollton, Ga., for the erection of a cotton mill. A meeting of those interested, held last week, resulted in the appointment of a committee to solicit subscriptions to stock. Correspondence with machinery makers will also be invited. Among those interested in the proposed company are L. C. Mandeville and J. H. Barron.

A cotton mill will be built at Poulan, Ga. The erection of the building has been commenced. This building will be constructed of brick, two stories high, 60x200 feet in size, and its equipment of machinery will consist of 200 looms for weaving purposes. Complementary machinery will, of course, also be installed. Mr. J. H. Bromley is said to be interested in this enterprise. It is also reported that an addition for spinning cotton and woolen yarns is in contemplation.

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving the character of machinery needed.

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

The Market for Cottonseed Products.

New York, N. Y., February 16.

The market for cotton oil is decidedly stronger, while a more active demand prevails. A slight advance has been made since our last, notwithstanding the weakness in tallow and greases generally, primarily owing to the increased interest in American oil abroad. The position of lard is very unsatisfactory, and with regard to this and other animal products it is difficult for sellers to realize official market quotations, thus rendering the outlook for domestic consumption of cotton oil anything but encouraging. In Europe the situation appears more hopeful, an active demand for refined oil obtaining, chiefly for Southern points. It is difficult to understand, however, that cotton oil will substantially advance unless edible fats improve in demand and value. May options for lard, Chicago, are 3.83½ cents, and tallow, in sympathy with declining prices abroad, is nominally quoted at 3 5-16 cents. Cotton oil is slightly weaker in England, and free offerings are making to the Continental consumers. Reports are arriving announcing the permanent closing down of many of the mills, 90 per cent. of the Texas mills being said to have already ceased operations. Seed supplies on mill premises, where such are in operation, are less than a year ago, which circumstance, in connection with the number of mills closed for the season, would indicate the oil output for 1896-97 as being of a very limited nature. Instead of being used for oil-extracting purposes, seed is being largely used by the planters as a fertilizer preferably to selling to the mills at the bidding prices of the latter. Holders of oil, therefore, decline offers at current prices for future delivery. The statistical position undoubtedly favors sellers, further betterment on this line being practically assured, conditional upon animal products not further declining in price. The question of the quantity of available oil supplies in the country is fraught with interest to both sides of the market. Some estimates represent the quantity now available as being less than at this period last year to the extent of from 150,000 to 200,000 barrels. The closing prices are as follows: Prime summer white, 25 to 27 cents; butter oil, 25 to 26 cents; prime summer yellow, 23½ to 24 cents; off summer yellow, 22½ to 23 cents; prime crude, 19½ to 20 cents; off crude, 15½ to 16 cents; prime crude, loose, 19 to 19½ cents, and soap stock, ¾c. Liverpool refined is quoted at 15s. 6d. to 15s. 9d.

Cake and Meal.—The domestic demand is fair, while exports are proceeding in a satisfactory manner. Anticipations of an improved demand for cake in the United Kingdom, owing to the hard weather which recently prevailed, have not been realized, primarily owing to the extraordinarily low price of corn. Supplies of American cake are limited, however, and prices, which favor sellers, are firm and unchanged. Quotations at primary sources are unchanged.

Cottonseed-Oil Notes.

A steamer was due at Velasco, Texas, on the 14th inst. to take out a cargo of cottonseed products to Europe from the Velasco Oil Mill.

The exports of cottonseed oil from the Port of Galveston for the month of Jan-

uary were valued at \$175,390, and of cottonseed meal and cake \$228,205. It was shipped to England, Germany and the Netherlands.

The Union Oil & Manufacturing Co., of Union, S. C., one of the most thriving enterprises in that town, declared a dividend of 15 per cent. for last year. The officers of the company are Mr. W. E. Thomas, president, and Mr. C. H. Burkett, superintendent.

The market for cottonseed products in Texas is quiet, the season for crushing being about to close. Cottonseed oil is about steady at the late decline, with quotations 15½ for prime crude, loose; refined butter oil, loose, is nominal, and prime summer yellow oil, 17½ to 18 cents. Cake and meal are quoted at \$13.50 to \$15 f. o. b. mill, interior points; cottonseed hulls, \$3 to \$4.

In New Orleans the market for cottonseed oil on the 15th inst. was weak, with prime crude oil in bulk 16 to 16½ cents; prime summer yellow in barrels, 22½ cents. Meal and cake was easy at \$16.25 to \$17 per short ton, and \$18.25 to \$18.50 per long ton for export. Receivers' prices ranged as follows: Cottonseed, \$7 per ton of 2000 pounds net to the mills, no commission of any kind to be added; cottonseed meal jobbing per carload at depot, \$16.50 to \$16.75 per short ton of 2000 pounds; for export per long ton of 2240 f. o. b., \$18 to \$18.25 for current month; oilcake for export, \$18 to \$18.25 per long ton f. o. b.; crude cottonseed oil at wholesale or for shipment, strictly prime in barrels per gallon, 17½ to 18 cents; loose, per gallon, 16 to 16½ cents, according to location of mill; refined cottonseed oil, prime in barrels per gallon at wholesale or for shipment, 22½ cents; cottonseed hulls delivered per 100 pounds, according to location of mill, 10 to 15 cents; linters, according to style and staple—A, 3½ to 3¾ cents; B, 3¼ to 3½ cents; C, 2¾ to 2¾ cents; ashes, none.

Cost of Road-Making in North Carolina

The Manufacturers' Record has frequently noted the fact that the State of North Carolina has been very progressive in the movement for good roads. Prof. J. A. Holmes, State geologist, has prepared a report on the subject, which shows the money raised in North Carolina for road purposes to be \$109,000. The largest amount (\$36,000) is raised by Mecklenburg county; the next largest (\$12,000) in Buncombe, and third (\$9,300) in Forsyth. The total number of counties that have adopted a road tax is about thirty. They are working their roads now by this system either wholly or in part.

Reports from a number of counties working convicts on their roads show that it costs less to work them on the public roads than it does to feed them in the county jails. In Wake, for instance, it costs twenty and one-half cents; in Mecklenburg, Forsyth, Durham and Alamance it costs twenty cents per day per convict to work them on the public roads. This cost includes board, clothes, medical attention and salaries of the guards. Whereas in these same counties, when these prisoners are kept in jail, it costs on an average of twenty-eight cents per day per prisoner to support them. The report shows, furthermore, that the convicts enjoy better health when working on the public roads than when in jail.

The report will be a valuable addition to the literature on the employment of convicts and the good roads movement.

Subscribe to the Manufacturers' Record. Price \$4 a year, or six months for \$2.

PHOSPHATES.

Phosphate Markets.

Office Manufacturers' Record, Baltimore, Md., February 18.

There is no material change in the conditions surrounding the local phosphate market, and the transactions for the week are hardly worthy of comment. The demand from local manufacturers is light, while there is a moderate inquiry from out-of-town dealers. From mining sections reports are unchanged, and in South Carolina, under the present deranged condition of the industry, there is only a moderate volume of business reported. The demand, both domestic and foreign, is light. Prices are nominally steady, with crude rock at the mines quoted at \$3; hot-air-dried \$3.25 Ashley river, and \$3.45 Charleston city. The industry in Florida shows no material change, and miners are not increasing the output beyond the actual demand. Prices are very steady, both for land rock and pebble, and shipments are moderate. Tennessee miners are not doing much at present, but the work of development is expected to begin about April. At all points in the Tennessee phosphate section now operating the various plants are well equipped for handling the rock on a large scale. The only arrival in the local market last week was the schooner Fanny Reiche from Charleston, S. C., with 750 tons of phosphate rock. In the charter line the schooner Josephine was taken to load phosphate at Charleston, S. C., for Baltimore. The market in New York for sail tonnage is generally quiet, and business is restricted by an actual scarcity of vessels. Prompt steamers for grain are in demand, with light tonnage offering, and phosphate freights are at a stand. The only charters reported are the following: British steamer Orfordness, 1260 tons, from Fernandina, Fla., to Hamburg with phosphate at 16/3, April; British steamer Caxo, 1291 tons, from Tampa, Fla., to Antwerp with phosphate at 17/, March, and schooner Winnegance, 251 tons, from New York to Wilmington, N. C., with fertilizer at \$1.

Fertilizer Ingredients.

A quiet market has been the rule during the past week, and the demand for ammoniates is light, especially from Southern sources. The Western market has ruled steady, with a better volume of business reported. Stocks in the West are well held, and are fully ample for the demand. The market for nitrate of soda is reported firm and values a shade higher. Prices for all other material remain unchanged.

The following table represents the prices current at this date:

Sulphate of ammonia (gas)...	\$2 25@	—
Nitrate of soda.....	2 00@	—
Blood.....	1 75@	1 77½
Hoop meal.....	1 65@	1 70
Azotine (beef).....	1 70@	—
Azotine (pork).....	1 70@	—
Tankage (concentrated).....	1 65@	1 70
Tankage (9 and 20).....	1 65@	1 70
Tankage (7 and 30).....	15 00@	16 00
Fish (dry).....	20 00@	—
Fish (acid).....	11 00@	12 00

Phosphate and Fertilizer Notes.

The steamship Lowlands sailed from Fernandina, Fla., on the 13th for Hamburg with a full cargo of phosphate rock, and the steamship Twilight arrived from St. Michael's to load phosphate for Rotterdam.

The Industrial Fertilizer Co., of Cordele, Ga., will enlarge its plant, which will place it among the largest mills in the State. The company is working more hands and turning out more material than ever before in its history.

James Thurston and Robert T. Ravenel, of Baltimore, trading as Thurston &

Ravenel, fertilizers, on Buchanan's wharf, made a deed of trust for benefit of creditors last week to George Lemmon, trustee, who gave bond in \$5000.

The firm of Wilson & Toomer, of Jacksonville, Fla., has been succeeded by the Wilson & Toomer Fertilizer Co. There is no change in the management, and the company as now organized is preparing for an extensive trade in special lines of fertilizers.

The British steamship Inverness cleared from Savannah, Ga., last week with 1647 tons of phosphate rock for Stettin, Germany, valued at \$16,470. The bark Joseph Souther arrived from Port Royal with 510 tons of phosphate rock consigned to Comer, Hull & Co.

The large dry-kiln of the Belle Phosphate Co., operating mines near Fort Meade, Fla., was destroyed by fire on the 7th inst. All of the machinery and other goods stored in the building were lost. The total loss is estimated at between \$20,000 and \$30,000, with no insurance.

A shipment of 1500 tons of garden fertilizers was sent from Fernandina, Fla., on the 11th inst. by the Mallory Line via New York to Auckland, New Zealand, by the American Fertilizer Co. This is the first consignment of phosphate that has been shipped from Fernandina to that country.

The schooner Fannie Brown cleared from Charleston, S. C., last week for Richmond, Va., with 670 tons of phosphate rock, and the schooner Annie Mulford for Baltimore with 800 tons. The total shipments of phosphate rock from Charleston for domestic ports since September 1, 1896, aggregate 41,583 tons, against 55,844 tons for the corresponding period last year.

The shipments of phosphate rock from the port of Fernandina, Fla., for the month of January were light, being only 5400 tons, distributed as follows: British steamship Turret Court for La Pallice with 2654 tons by H. F. Dutton & Co., and the steamship Taurus for Certe with 2746 tons by P. B. & R. S. Bradley. The estimated shipments for February are placed at 11,000 tons. The following vessels have been chartered: Steamship Atlantic, by J. H. Packard; steamships Lowlands and Twilight, by H. A. Ford, and steamship Eastlands, by A. Trubenbach.

A Woman's Exposition.

The ladies of Charlotte, N. C., are planning to hold what is to be termed "The Woman's Exposition of the Carolinas" in that city, to begin about May 1. While the affair is to be conducted under the auspices of the Ladies' Auxiliary of the Young Men's Christian Association of Charlotte, it promises to be much broader in scope than an affair merely for religious objects. According to a circular issued by the projectors, it is expected to gather together the finest art exhibit, the greatest collection of curios, relics, antiquities, historical data, specimens of geology, archaeology, ethnology, etc., ever shown in the Carolinas. The manufactured, agricultural and mineral products of the States will be profusely displayed. It is intended to make a special collection of personal clothing and ornaments of household furniture and utensils that were in use in the time of the early settlers. All manner of family heirlooms and keepsakes of every description of any noted and well-known persons are wanted for this exhibit.

The Manufacturers' Record commends the idea, but would suggest that the time is too short for anything so comprehensive.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record,
Baltimore, Md., February 18.

In nearly every department of the local lumber market there is a quiet tone to trade, and business during the week has been dull, with no prompt demand for material. Receipts of yellow pine continue moderate, and stocks on hand are quite sufficient to meet any demand. Air-dried lumber is dull, with values barely steady. Planing mills and box factories are not purchasing in large lots, and the demand from other sources is light. Kiln-dried yellow pine is in fair demand, and some good orders for near delivery have been received during the past week. Prices for this class of lumber are firm, with holders asking outside figures. The market for white pine is improving somewhat, and there is some demand for certain grades. Cypress is dull and easy. In hardwoods the movement is moderate, and the demand is mostly from out-of-town buyers. The export business has not been as active so far this month as usual, owing to the accumulation of stocks in Great Britain and the Continent and the absence of demand for American hardwoods. Commission merchants here look for a fairly active business later on, while shippers are cautious and are only shipping on actual orders.

The following list represents the prices current at this date:

[The quotations for yellow pine are for cargo lots, and for all hardwoods the figures indicate values for choice car lots.]

VIRGINIA AND NORTH CAROLINA PINE		
5-4x10 No. 2, kiln dried.....	\$12 50@	13 50
5-4x12 No. 2, kiln dried.....	14 00@	15 00
4-4x10 No. 1, kiln dried.....	15 00@	15 50
4-4x12 No. 1, kiln dried.....	15 50@	16 50
4-4 edge, No. 1, kiln dried.....	13 00@	14 00
4-4 wide edge, No. 1, kiln dr'd.....	17 00@	18 00
6-4x10 & 12, No. 1, kiln dried.....	23 00@	24 00
4-4 No. 1 edge floor, air dried.....	13 00@	14 00
4-4 No. 2 edge floor, air dried.....	10 00@	11 00
4-4 No. 1 12-in. stock, air dried.....	15 00@	16 00
4-4 No. 2 12-in. stock.....	12 00@	13 00
4-4 edge box or rough wide.....	7 50@	8 50
4-4 edge box do. (ord. widths).....	6 50@	7 50
4-4 12-in. rough.....	9 00@	10 00
3/4 narrow edge.....	5 50@	6 50
3/4 wide.....	6 50@	7 50
3/4x9 1/2 and 10 1/2-inch.....	8 50@	9 50
Small joists, 2 1/2-12, 14 and 16 long.....	7 50@	8 50
Large joists, 3-16 long and up.....	8 00@	9 00
Scantling, 2x3, 2x4 and 3x4.....	7 00@	8 00

WHITE PINE.		
1st and 2d clear, 4-4, 5-4, 6-4 and 8-4.....	47 00@	48 00
3d clear, 4-4, 5-4, 6-4 and 8-4.....	42 00@	43 00
Good edge culls.....	14 00@	15 00
Good stock.....	16 00@	17 00

CYPRESS.		
4-4x6, No. 1.....	20 50@	21 50
4-4x6, No. 2.....	14 50@	15 50
4-4x6, 16 feet, fencing.....	10 00@	11 00
4-4x6, rough.....	8 50@	9 00
4-4 rough edge.....	8 00@	8 50
4-4 edge, No. 1.....	16 00@	17 00
4-4 edge, No. 2.....	12 00@	13 00
Gulf, 4-4, Nos. 1 and 2.....	28 00@	30 00
Gulf, 6-4, Nos. 1 and 2.....	31 00@	32 00

HARDWOODS—WALNUT.		
5-8, Nos. 1 and 2.....	65 00@	75 00
4-4, Nos. 1 and 2.....	80 00@	90 00
5-4, 6-4 and 8-4.....	85 00@	95 00
Newell stuff, clear of heart.....	85 00@	100 00
Culls.....	20 00@	30 00

OAK.		
Cabinet, white and red, Southern, plain-sawn and good, 1 and 2, 8 inches and up, 12 to 16 feet long, 4-4.....	30 00@	34 00
Quartered white, Western, 1 and 2 quality, all figured, 6 inches and up wide, 4-4.....	53 00@	55 00
Culls.....	10 00@	15 00

POPLAR.		
Nos. 1 and 2, 5-8.....	24 50@	25 50
Nos. 1 and 2, 4-4.....	28 00@	30 00
Nos. 1 and 2, 6 and 8-4.....	32 50@	33 50
Culls.....	11 50@	12 50

SHINGLES.		
Cypr., No. 1 h'ts, sawed, 6x20.....	6 50@	7 50
No. 1 saps, sawed, 6x20.....	4 75@	5 25
No. 1 hearts, shaved, 6x20.....	6 00@	7 00
No. 1 saps, shaved, 6x20.....	5 00@	—

LATHS.		
White pine.....	2 50@	2 75
Spruce.....	2 10@	2 20
Cypress.....	2 10@	2 20

Charleston.

[From our own Correspondent.]

Charleston, S. C., February 15.

During the week under review the movement here has been fairly active in most departments of the lumber trade, and the inquiry is better. Trade, how-

ever, lacks the activity expected, but later on shippers look for a better volume of business. The demand for good grades of manufactured lumber and other wood products is steady, and prices continue to show a hardening tendency. Millmen at points adjacent to this port are generally doing an average business, and orders are coming in more freely to nearly all the mills. Prices at the close of the week were as follows: Merchantable lumber, \$14 to \$16 for city-sawn, \$12 to \$14 for railroad; square and sound, \$9 to \$13 for railroad, \$8 to \$11 for raft; dock timber, \$4.50 to \$6.50; shipping, \$8.50 to \$10.50. There is a good demand for shingles, and shipments from outlying points are better. Prices range from \$5 to \$7, as to quality and condition. During the past week the following cargoes left this port: Schooner Leander V. Beebe for Boston with 600,000 feet of lumber, and the barkentine Clara E. McGilvery for the same port with 210,000 feet. For New York schooners G. R. Congdon with 326,000 feet and Nellie W. Howlett with 450,000 feet; steamer Seminole 1362 crossties, steamer Comanche 960 crossties and steamer Iroquois with 5000 feet of lumber and other merchandise. The demand for crossties is quite active, and several large contracts have been placed during the month. The total shipments of lumber since September 1, 1896, amount to 26,196,770 feet coastwise and 749,000 feet foreign, against 33,359,310 feet coastwise and 1,118,000 feet foreign for the corresponding period last year. Rates of freight on lumber and timber are not materially changed. To New York and sound ports \$4.25 to \$4.50 are about the figures; ties, 14 to 14 1/2 cents each, and dry lumber to Providence, \$4.50. Oak crossties to Philadelphia are quoted 19 cents each. Among the New York charters reported are the following: A schooner from Union Island to New York with lumber at \$4.37 1/2, and a schooner, 501 tons, from Charleston to New York at \$4.25.

Savannah.

[From our own Correspondent.]

Savannah, Ga., February 15.

The lumber market has shown more activity during the past week, the demand being better and prices for the better grades of manufactured lumber a shade firmer. From nearby milling points reports are more encouraging, especially from Brunswick, where the situation is more satisfactory. Manufacturers and shippers at that port are at the moment well supplied with business, and the month's business at the port of Brunswick will show up remarkably well for this period of the season. There are some complaints of dullness and want of snap and vigor in the local market, but the business of this port at present is active, while the lumber business is getting a fair share. At milling points in the interior the mills are all running at their full capacity, and are well supplied with orders at fair prices. The demand at present for crossties is active, and the industry is becoming a very important one, while those engaged in it are enjoying a fair profit. The market here continues to show a fair volume of trade, and at the close on Saturday prices ranged as follows: Ordinary sizes, \$11 to \$12; difficult sizes, \$13 to \$18; flooring boards, \$15 to \$22; shipstuffs, \$16.50 to \$20, and sawn ties, \$10. Among the shipments during the week the following vessels were reported: Schooners Aaron Rippard with 385,000 feet of lumber, Robert Dillon with 280,645 feet and David Beard with 465,575 feet, all for Baltimore. The schooner Emily Northam cleared for Wilmington, Del., with

265,312 feet. Baltimore steamers took out 67,960 feet of lumber, New York steamers 38,690 feet, Philadelphia steamers 22,630 feet and Boston steamers 37,620 feet. Lumber and timber freight rates are nominally steady, without change. From this and nearby ports of Georgia the quotations are \$4 to \$4.50 for a range including Baltimore and Portland, Me. To the West Indies and Windward rates are nominal; to Rosario, \$12 to \$13; Buenos Ayres and Montevideo, \$10 to \$11, and to Rio Janeiro, \$14. Steamer rates to New York and Philadelphia are quoted \$7, to Boston \$8 and Baltimore \$5. Among the lumber charters reported in New York are the following: Schooner Fred Gower, 778 tons, from Brunswick to Boston at \$4.62 1/2, and a schooner, 381 tons, from Darien to Philadelphia at \$4.25, free wharfage. The Italian bark Carlo cleared from this port for Oporto with 351,479 feet of pitch-pine lumber.

Jacksonville.

[From our own Correspondent.]

Jacksonville, Fla., February 15.

The volume of business during the present month in lumber and timber at this port has been fair, and at the moment there is a very good demand for desirable material. The mills at this place and nearby points are now very busy, and have as much work as they can handle. The work on the new saw mill which is being erected by the Cummer Lumber Co. is progressing rapidly, and when finished will be one of the most thoroughly equipped lumber mills in the South. The mill is to be three stories high, the floor of the building being used for sawing lumber, which, when finished, will be run into dry-kilns, six in number. The capacity of the mill will be at least 100,000 feet per day. Among the clearances last week were the schooner Canarion, which loaded at Bucki's mill, and the schooner Delta with cargo of lumber from Harter's mill. The British schooner Shenandoah cleared for Demarara with a cargo of 158,725 feet of lumber from Bucki's mill. The Clyde steamers Algonquin and Delaware sailed for New York with over 500,000 feet of lumber, and the steamer Delaware cleared for Boston with 275,000 feet of lumber. Among the vessels loading are the J. W. Belano, Robert C. McQuillan and Mary S. Brockaway. The schooner J. Percy Bartram is loading lumber for New York, and the schooner Albert L. Butler for Philadelphia. Lumber freights are steady, with a moderate offering of tonnage. A schooner, 304 tons, was chartered last week in New York to load here for Portland, Me., at \$5.

Pensacola.

[From our own Correspondent.]

Pensacola, Fla., February 15.

A marked increase has taken place in the volume of business at this port, and with the improvements now in progress the general trade of the city will be greatly increased. In the market for lumber and timber there is considerable activity, and baymen have now about as much work loading vessels as they want. There is a fair demand for timber, but prices do not seem to advance, as was expected a month or two ago. Shippers, however, are sending forward considerable material, but many are cautious and refuse to make shipments while the market in Great Britain is so well supplied. There is a good demand for lumber, principally for the better grades, and the inquiry from South and Central America and the Continent is active. Prices on yellow pine show a firmer tone, and manufacturers want an advance on certain

grades of material. There is a good demand for lumber from local builders and contractors, and nearly all are busy, while in almost every section of the city brick business buildings, handsome residences and neat cottages are going up. Among the new firms of timber and lumber exporters Messrs. Wright & Whiting have just commenced active operations. There is a better feeling among timber shippers generally, and they look forward to a good export trade during the present year. Among the shipments during the past week the following vessels are reported: Bark Julius for Oporto with 379,000 feet of lumber; bark Gio Battu Brighetti for Buenos Ayres, A. R., with 595,000 feet of lumber; bark Baciccin Revello for Genoa with 430,000 feet of lumber; British steamship Capenor for Dordrecht with 1,030,000 feet of sawn timber and 623,000 feet of lumber; British steamship Madura for Dordrecht with 594,000 feet of sawn timber and 1,100,000 feet of lumber. Among the charters reported in the New York market last week were the following: British barks Arizona, 1085, and Assyria, 1098 tons, and the bark Christiana, 945 tons, from Pensacola to Cardiff, Newport, Swansea or Greenock with sawn timber at 97/6; Norwegian bark Gratia, 1506 tons, from Pensacola to Cardiff, Newport or Swansea with timber at 95/, option of Tyne, 97/6. Other charters reported are steamship Knutsford, 1353 tons, for United Kingdom or Continent, and steamship Sandfield, now here with ore.

Mobile.

[From our own Correspondent.]

Mobile, Ala., February 15.

The general trade of this port for the month of January last shows a large increase over the corresponding month of 1896, and at the moment business here is active, and along the wharves and docks everything denotes a prosperous movement. During the month of January the timber and lumber trade participated in the general increase of business, and during the month 8,530,000 feet of lumber left the port, valued at \$90,537; of sawn timber 1,816,000 superficial feet were exported, valued at \$17,980, while of hewn timber 29,431 cubic feet went to England and Sweden and Norway. During the present month business in timber and lumber shows up exceedingly well, and the market for timber is firm, with sawn timber at 10 1/4 cents per cubic foot, 40-foot basis, and contracting at 10 1/2 to 10 3/4 cents. There is a fair demand for cypress at 5 to 8 cents per cubic foot, according to average. The demand for cedar is dull at 20 to 30 cents, according to quality and size. In hewn timber there is a scarcity, and prices continue steady at 12 to 12 1/2 cents, basis of 100 cubic feet, average B1 good. There is a moderate demand for hewn oak at 18 cents for first class. In lumber business is improving very materially, and the demand from South America and other points is good. Prices are also firmer for first-class grades of material. During the past week the shipments were as follows: Ship Repetto for Buenos Ayres, A. R., with 793,110 feet; schooner Grace for Kingston, Jamaica, with 344,544 feet; steamer Suniva for Boca del Toro with 5000 feet, and bark Louis for Port Natal, Africa, with 16,521 feet of lumber and 16,521 cubic feet of sawn timber. The bark Helmi cleared for Weener, Germany, with 12,904 cubic feet of sawn timber and 118,241 feet of lumber. The total shipments of lumber from this port since September 1, 1896, aggregate 32,968,459 feet, against 29,183,307 feet last year. Of sawn timber during the same period 1,873,952 cubic feet were exported, against 1,662,373 cubic feet last

year, and of hewn timber 135,825 cubic feet, against 327,924 cubic feet in 1895-96. Freight rates on both lumber and timber are steady and unchanged. The bark Helmi took out to Weener, Germany, additional cargo of 5400 cubic feet of hewn timber.

Beaumont.

Beaumont, Texas, February 13.

The interior trade again seems to be upon the point of stagnation. Orders are coming in very slowly, and mixed cars are making up a large percentage of the shipments. The depression has extended to the side lines of the lumber trade, and shingles, staves, etc., are in very poor demand at prices which are far from leaving a satisfactory margin to the manufacturer. The millman, however, is hopeful. By comparison he sees that shipments to the interior for the past month have been greater than in the same period last year, and although business for this month will not prove much better than February, 1896, yet as the season opens up a better demand will probably be ushered in. Greater attention is being given to the export trade by all the mills in this section, and stocks on the yards are not accumulating as they were doing at this time last year.

The shipments to Sabine Pass for export are now running from four to five times as heavy as at this season last year.

This feature steadies the confidence of millmen and inspires hope for the market of the present year. Shipments are being rapidly pushed at Sabine Pass, and a few new charters have been perfected for vessels to Mexican and other foreign ports.

The Warren Land & Lumber Co.'s mill was attached last Monday by the Texas & Louisiana Land & Lumber Co. for a claim of \$14,475. Other claims have also been made for between \$5000 and \$6000. It is also reported that before the claims were made mortgages for \$50,000 were recorded.

The recent rise has brought down some big runs of fine timbers. Partin & Knight took a run into Orange a short time ago that had several unusual sticks. The largest is fifty-three feet long, 36x38, and is a splendid specimen, measuring 503 cubic feet.

The Clark & Boice Lumber Co. has been chartered at Dallas, with a capital of \$50,000. A charter was granted last Thursday to the Southwest Texas Railroad Co. for the building of a line from Brenham to Corpus Christi, and from there two side lines will be run, one to Brownsville and the other to Eagle Pass. The capital stock of the company is \$550,000. D. Rogers, of the Manhattan Construction Co., is the engineer of the railroad, and he states that work will be begun by the fore part of April. The proposed route will have a mileage of about 500 miles, but the company contemplates building down to Tampico and the City of Mexico, and has detailed representatives to Mexico to attend to its interest. It is said that arrangements have been made to place the bonds in London.

Lumber Notes.

The steamship *Ethiopia*, which sailed from Mobile on the 4th inst. for Liverpool, had 594,380 feet of lumber among her cargo.

It is stated that the tannery at Middlesborough, Ky., contemplates getting out 12,000 cords of tanbark during the present year.

The present rise in the upper streams of the Tennessee river is bringing out large quantities of timber. About 250 rafts arrived at Knoxville, Tenn., last

week, consisting of poplar, oak and pine timber.

The Clyde steamer *Algonquin* sailed from Jacksonville, Fla., last week with 300,000 feet of lumber, 100,000 shingles and other cargo.

The Drew Lumber Co., of Fernandina, Fla., has four vessels chartered to take out cargoes of lumber and cross-ties from that port at once.

A large planing mill is to be built at Grafton, W. Va., by Shakelford & Zitzinger. A yard and mill for manufacturing building supplies will be a feature.

West & Jones have established a planing mill at Cedartown, Ga. They purpose handling pine and oak lumber, and will manufacture sash, doors and blinds.

The Brazoria Lumber Co., at Angleton, with a capital of \$5000, and the Clark & Brice Lumber Co., of Dallas, Texas, with a capital of \$50,000, received their charters last week.

The shipments of lumber by the Texas & New Orleans Railroad from Beaumont, Texas, for the month of January, 1897, amounted to 1286 cars, against 1238 cars last year, being an increase of forty-eight cars.

The British steamship *Acme* cleared from Pensacola on the 12th for Rotterdam with 1,494,000 feet of lumber, and the Norwegian bark *Oscar* for Bremen with 483,000 feet of lumber and 34,000 feet of sawn timber.

Messrs. L. A. Davis & Bro., of Crandall, Fla., have shipped since January 1 nearly 1,000,000 feet of lumber to Trinidad, and are now loading another schooner, while another is due to arrive to take a cargo of lumber to the above market.

Mr. George G. Tyler, one of the leading packing-box manufacturers of Baltimore, made a deed of trust for the benefit of creditors to Charles C. Homer and Thomas J. Shryock, who bonded in the sum of \$100,000, the Fidelity & Deposit Co. of Maryland furnishing the same.

It is estimated that not less than 5,000,000 feet of logs will come out of the upper Tennessee, Clinch, French Broad, Emory, Watauga, Hiwassee and Ocoee rivers on the present rise. The lumber and milling firms at Chattanooga are expecting to receive the above amount this week.

The British ship *Lord Wolsley*, which has been loading at the warehouse of the Louisville & Nashville Railroad at Pensacola, Fla., cleared from that port on the 12th inst. for Yokohama, Japan. Her cargo consisted of 3000 tons of pig iron, 855 tons of coke and 27,000 feet of lumber.

A raft of 125 sticks of hewn timber arrived in Beaumont, Texas, from points on the Neches river, consigned to T. E. Spotswood & Co. The sticks will average 130 feet in length, and it will be the first cargo of hewn timber exported through the port of Sabine Pass. It goes to the United Kingdom.

About twenty large rafts of timber are tied up at the mouth of Obed's river, near Celina, Tenn., awaiting for the Cumberland river to get in good shape for running. The river is rising, and a large drift of logs has been started for Nashville. The timber is principally oak, poplar and walnut of fine quality.

At a meeting of the stockholders of the Southern Pine Co., held at Savannah last week, the following directors were re-elected: H. P. Talmadge, W. B. Stillwell, J. Flannery, J. K. Clarke, L. R. Miller, C. D. Baldwin, J. Stillman, S. P. Hamilton and W. Hogencamp. H. P. Talmadge was re-elected president,

and W. B. Stillwell, secretary and treasurer.

A. B. Baird, chief of the Forestry Department of the Tennessee Centennial, called a meeting on Monday last of the lumbermen and woodworkers of Nashville to perfect plans for the Nashville exhibit in the Forestry Building. Memphis and Chattanooga have already extensive exhibits of forest products at the exposition.

W. H. Byrne & Co., of Stockton, Ala., have leased the saw mill of the Mobile Lumber Co. at Mobile, and will put it in operation at once. Byrne & Co. have a large quantity of timber lands in Baldwin county, and they will tow their logs to Mobile and saw them at their mill. The firm will make their headquarters in that city.

The board of directors of the Kentucky Wagon Manufacturing Co. at Louisville, Ky., declared a quarterly dividend on the 10th inst. of 1½ per cent. on its common capital stock. The books of the company will close on the 27th inst. Checks in payment of the dividend will be mailed to stockholders on the 1st day of March, 1897.

Capitalists who are operating in Alachua county, Florida, propose building a large saw mill at Trenton, which will be the largest in that section. The company will rebuild the old tramroad to the Suwannee river, a distance of six miles. The lumber, when sawed, will be floated down the river to the Gulf and loaded on schooners.

C. E. and G. A. Roberts, of the Rapides Lumber Co., who own a saw-mill plant and 18,000 acres of pine lands at Woodworth, near Alexandria, La., have sold their five-eighths interest to the Long-Bell Lumber Co., who are already members of the firm. J. C. Fontain, of Texarkana, Ark., a member of the firm, has been appointed manager.

The Huntsville Furniture & Lumber Co., of Huntsville, Ala., filed articles of incorporation last week. The stockholders are James A. Ward, S. J. Mayhew, T. W. Pratt, J. Coons and C. E. Hovy. The capital stock is \$25,000. The company will manufacture furniture of every kind and do a general logging, timber, saw-mill and planing-mill business.

The shipments of logs and timber from the port of New Orleans during the year 1896 were valued at \$209,837, staves and headings \$1,934,048 and lumber \$609,481, making a total of \$2,753,366. During 1895 the shipments were as follows: Logs and timber \$129,086, staves and headings \$1,433,641 and lumber \$243,835, making a total of \$1,806,562.

The box shoo orders received in New York for export have shown good results during the past week. For Japan an order has recently been given for 400,000 shooks. This, the manufacturers say, will be the first heavy shipment to that country from New York. Two carloads will shortly be shipped to the English West Indies, and six to South America.

The secretary of the Mechanics, Dealers and Lumbermen's Exchange of New Orleans reports the receipts of building material at that city for the week ending February 11 as follows: Lumber 882,000 feet, and for the season 33,627,000 feet, against 49,303,000 feet last year; shingles for the week 50,000, laths 150,000, oak staves 501,800 and cypress staves 62,000.

The Frost-Trigg Lumber Co. was chartered at Texarkana, Ark., on the 12th inst., with a capital of \$600,000 subscribed. Its headquarters will be in St. Louis. The principals are R. L. Trigg, of the Trigg Lumber Co., Sibley, La.; E. A. Frost, Frost Lumber Co.,

Frostville, Ark., and Allen Bros. & Wadleigh, of Haughton, La. Eleven operating saw mills are covered by the organization.

The barge *Ocean Belle* arrived at the port of Brunswick, Ga., last week from Galveston, Texas. Messrs. N. Emanuel & Co. will load the barge with 40,000 cross-ties, being equal to 1,250,000 feet of lumber. The schooner *James C. Beecher* was loading lumber from Geo. S. Baxter & Co., and the schooner *Minnie A. Bonsall* from the Hilton-Dodge Lumber Co. The schooner *Edward Stewart* cleared for New York last week with 8100 cross-ties.

According to United States Commercial Agent Angell, at Roubaix, France, there is a market awaiting American oak lumber in that republic. In a report by M. Angell to the State Department at Washington, D. C., he says that one firm alone stands ready to take \$400,000 worth annually in place of Hungarian oak if proper connections can be made with American lumber exporters. M. Angell offers to put American exporters in communication with importers upon application.

The lumber shipments at Sabine Pass, Texas, are continuing to increase, and the situation in that section is very satisfactory. During the month of January last they were largely in excess of any previous month in the history of the port, reaching the sum of 6,858,913 feet.

The Montrose Lumber Co. was recently organized, with S. P. Ryland, Jr., of Baltimore, president; R. R. Moore, of Suffolk, Va., vice-president and general manager; T. M. Sizer, secretary. The mill is at Montrose, N. C., and office at Suffolk, Va.

The Mechanics, Dealers and Lumbermen's Exchange of New Orleans, also the Board of Trade, Bureau of Freight and Transportation, Louisiana Sugar and Rice Exchange and Maritime Association, have addressed a letter to Mr. Stuyvesant Fish, president of the Illinois Central Railway, urging the necessity of open timber docks and derricks. The members of the various exchanges of New Orleans who export lumber, ties, timber, logs, etc., consider that the adoption of such conveniences would obviate frequent handling between car and ship, and increase the traffic of the railroad.

Prominent lumbermen were in conference at Brunswick, Ga., on the 10th inst. The following representatives were among those in attendance: James L. Foster, manager of the Hilton & Dodge lumber mills; Joseph Hilton, Joseph P. Gilson, Ferdinand Newman, New York; E. W. MacLane, president of the Southern Pine Lumber Co., New York; H. H. Gardner and E. J. Marsh, Georgetown, S. C. It is believed that preliminary steps were taken to secure proper representation before the ways and means committee to ask for such protective tariff laws as will enable manufacturers to continue business at a reasonable profit.

How to Attract Northern and Western Investors and Land Buyers.

Messrs. Pannill Bros., real-estate dealers, Norfolk, Va., writing about real estate in that section, say:

"We have within the past two years made quite an outlay in advertising, and we can truthfully say that the 'Southern States' magazine exceeds by far anything we have ever tried. In fact, so far as we can learn, it is the only medium that has ever brought us any returns. We have now under advisement several matters brought about through answers to our advertisement in your paper, any one of which will pay us many times over the cost of the advertisement."

MECHANICAL.

SAVING IN FUEL.

The Adaptation of Green's Economizer to Steam Boilers.

In all progressive manufacturing companies today the latest improved machinery is installed to reduce the cost of manufacture. Is this always carried out in the apparatus to drive the machinery, especially in the boiler-room, where the cost of fuel is a considerable item in the year's accounts of expenses? Is a 10 to 15 per cent. reduction in this one item of fuel worth considering? We think no manufacturer at the present day can afford to overlook it. It is a recognized fact that in the best boilers from 15 to 30 per cent. of the heat generated passes up the chimney unused, and in many of the older types of boilers a much larger percentage is wasted. The temperature of escaping gases from boilers ranges from 450° to 600° Fahr. where boilers are worked up to their commercial rating, and a boiler should be worked up to its rating to obtain the most economical results.

When boilers are worked with a low temperature of escaping gases it will always be found that by increasing the temperature in the combustion chamber a more rapid circulation is given to the water and more economical results are obtained. The idea of utilizing this heat in the flue gases is not new, and many engineers have made flue heaters of coils of wrought iron and brass tubes which have worked well for a few months until they became coated with soot and their efficiency gradually decreased until they became useless. The Green economizer, consisting of a series of vertical cast-iron tubes, with scrapers working constantly at a slow rate of speed up and down the tubes to keep them clean, has effectually overcome the difficulty. The scraper mechanism can be driven by a belt from some convenient shaft, or independent engine, or motor; the power to drive the same is very small.

The economizer can be applied to any sized boiler plant from 100 boiler horsepower to the largest plants built. The amount of saving to be obtained by the use of economizers depends on the conditions under which the plant is being run, but will be a paying investment under the conditions of the majority of the plants being run today.

The greatest saving is to be made when the engines are run condensing and the feed water for the boilers is taken from the hot well at from 90° to 110°. The water taken at this temperature is heated up to from 230° to 250° in the economizer, depending on the temperature of the escaping gases. The economizer is being used in many cases, taking the water from an exhaust steam feed-water heater at 200°, and being heated in the economizer to from 270° to 290°.

In some cases, where condensing engines are used, the condensing pumps and feed pumps are run high pressure and the exhaust steam is used to heat the feed water, which will heat it up on an average not more than to 160° or 180°. The feed water can then be passed through an economizer and very good results shown. If, however, it pays to run an engine condensing it will pay to run the condenser pumps condensing, which use considerably more steam than an engine per indicated horsepower.

In manufacturing establishments, such as bleacheries and dyehouses, where hot water is largely used, the economizer is used to supply this hot water, the water being heated in the economizer to above

boiling temperature. Many of the mills in New England are using it for this purpose, and find a great economy in doing so. In one mill in New Jersey, part of the economizer is used for heating the water to feed the boilers and part to heat the water for heating the mill by the hot-water system and obtaining good results. The Pabst Brewery, at Milwaukee, is using the hot water in addition to feeding its boilers for washing out its barrels.

Hot water obtained by this means costs nothing, as heat is used which otherwise would be lost. In large manufacturing and street railroad plants the economizer has special advantages on account of the large volume of water always in reserve at the evaporative point when sudden demands for steam are made on the boilers, which enables the boilers to work always at their most economical point.

Where condensing water is too expensive to be obtained there are now being made some very effective evaporative condensers, by means of which the water is cooled and used over and over again. By the use of these condensers and the Green economizer the saving in fuel over a high-pressure plant will pay for the outlay invested.

One advantage also in using an economizer should not be overlooked, and that is, that the higher the temperature of feed water going into the boilers the easier the work on them will be, and therefore the less the strain from expansion and contraction of the metal, making a considerable saving in the repairs to the boilers. Considerable of the sediment in the water is deposited in the economizer, where it can be easily blown off, thus helping to keep the surfaces of the boilers clean and increasing the steaming capacity.

An economizer can be applied to any type of boilers and to any existing plant without having to shut down, except for a few hours to make connections. If a steam-user is short of 10 to 15 per cent. of boiler power, he can obtain it by the installation of an economizer, and without having to burn any more fuel, thus saving an outlay on an additional boiler. The economizer is successfully used with natural, forced or mechanical draft.

The percentage of gain resulting from the increase of temperature of the feed water in any particular case can be easily calculated from the following formula:

$$100 \frac{(T - t)}{H - t}$$

Gain per cent. equals

H - t

where H is total heat of steam at boiler pressure reckoned from 0° F.

T is temperature of feed water after heating.

t is temperature of feed water before heating.

The Green economizer is used in some of the largest manufacturing plants, sugar refineries, mines and railroad plants throughout the world, having been installed to 30,000,000 boiler horsepower, and is manufactured by the Fuel Economizer Co., Matteawan, N. Y., which has recently erected new works with latest improved machinery devoted entirely to the manufacture of economizers.

Iron Markets.

Cincinnati, Ohio, February 13.

Two developments of the week impart hope to the pig-iron market—first, the dissolution of the steel-rail pool, which has resulted in an independent hustling for orders for rails quite unusual with the respective dignified railmakers. The greatly reduced prices have invited liberal orders, aggregating possibly 250,000 tons, which will be further augmented, doubtless, before the members of the old

association recombine. At current figures export orders are obtainable, which will probably add to the tonnage already entered and being booked. A cheerful feature coincident is the corresponding requirements for fishplates, bolts and accompanying materials. Secondly, the continued demand abroad for American pig iron, which is limited for the time being by inadequate shipping facilities.

There is a slight improvement in consumption, but non-Bessemer stocks as yet feel no quickening from the stimulations referred to.

There is an improved demand for pig iron, and sales, though in the main confined to small and 100 and 200-ton lots, are more numerous.

Our quotations below indicate fairly the basis of the week's transactions.

We quote for cash f. o. b. Cincinnati:

Southern coke No. 1 foundry	\$10 50@11 75
Southern coke No. 2 foundry	10 00@10 25
Southern coke No. 3 foundry	9 50@9 75
Southern coke gray forge	9 25@9 50
Southern coke mottled	9 25@9 50
Southern coke No. 1 soft	10 25@10 50
Southern coke No. 2 soft	9 75@10 00
Belfont coke No. 1, Lake Sup.	12 00@12 50
Belfont coke No. 2, Lake Sup.	11 50@12 00
Hanging Rock charcoal No. 1	15 00@16 00
Tennessee charcoal No. 1	13 00@14 00
Jackson Co. silvery No. 1	13 50@14 00
Standard Alabama car-wheel	14 75@15 50
Tennessee car-wheel	13 50@14 50
Lake Sup. car-wheel & mail'e	14 75@15 25

Philadelphia, Pa., February 13.

The present situation to producer and consumer is very trying; to the man who speculates in regard to the future it is interesting, and to the practical, at the same time scientific man, it is absorbing. Fifty steel cars, made from steel in one way or another from start to finish, are being constructed this week for a Pittsburgh party. These cars will each carry 60,000 pounds of coal, and can return from the lakes with 100,000 pounds of ore. They are 20 per cent. lighter than the ordinary cars now in use, and basing the mileage annually of each car 10,000 miles, the new steel cars will show quite a saving, as there will be so much less dead weight to carry. There seems to be an improvement in the general situation, and two of the Eastern railroads have placed liberal orders for equipments, buyers covering said orders with their pig-iron requirements.

We quote for cash f. o. b. Philadelphia docks:

No. 1 X standard Alabama	@11 75
No. 2 X standard Alabama	@11 25
No. 1 X standard Virginia	@11 75
No. 2 X standard Virginia	@11 25
No. 1 X lake ore iron	@13 50
No. 2 X lake ore iron	@13 00
Lake Superior charcoal	15 85@16 35
Standard Georgia charcoal	16 25@17 00

Chicago, Ill., February 13.

It can hardly be likened to a thunder-bolt from a clear sky, for the sky wasn't clear, but may we not say that a vivid, lurid lightning flash has shot across the continent, and that already in consequence the business atmosphere seems clearer.

The collapse of the steel pool and the subsequent sharp competition has resulted in the prices that so recently attracted the attention of the entire business world. Within a few hours from the time the low prices were named, large orders were placed by Western roads, and the prospects are that a large local concern, before the week ends, will have closed additional trades that will take their entire rail product for six or eight months ahead. Thus does low or the absence of fictitious prices stimulate trade.

Undoubtedly the gait has been set at which we will travel for a few months to come. Except for some equalizing here and there, where producers have been holding above the actual market, bottom values have been reached, and all lines of metal manufacturing have received a stimulus that can hardly fail to result in a buying movement. Prices will undoubtedly rule low for some time to come, but

the yearning of the great business heart is for business, a release from stagnation. Let us have business, and in due time profits will also come.

We revise our quotations to the basis of the few trades that have recently been closed:

Local coke foundry No. 1	@11 75
Local coke foundry No. 2	@10 75
Lake Sup. charcoal Nos. 1 to 6	13 50@14 50
Ohio Scotch No. 1	12 00@12 25
Jackson Co., Ohio, silvery	14 00@15 50
Alabama silvery No. 1	@11 40
Southern coke No. 1 foundry	11 25@11 50
Southern coke No. 2	10 65
Southern coke No. 3	10 15@10 25
Southern coke No. 1 S.	10 65@10 90
Southern coke No. 2 S.	10 40@10 60
Mannle	11 75@12 50

ROGERS, BROWN & CO.

The History of the Last Quarter-Century in the United States—1870 to 1895. By E. Benjamin Andrews, president of Brown University. Two volumes, with more than 350 illustrations. Price \$6. Publishers, Chas. Scribner's Sons, New York city.

Those who remember the series of papers undertaken by Professor Andrews on the salient events of the last quarter-century, and published several years ago in Scribner's Magazine, will view with especial pleasure the present work. Few quarter-centuries in the world's life bristle with salient events as does that following 1870. The author, recognizing this circumstance, undertook to portray the chief of these events as far as they related to the United States in the magazine series of articles referred to. The present work, while based on the magazine articles, is essentially new. The original matter has been carefully revised, a great deal of it rewritten and extensive and valuable additions have been made, securing a consecutiveness of narrative. In a work of this nature the utmost care is necessary in order to present in a totally unbiased manner the political, industrial and general historical transactions of the period under consideration. This the author has succeeded in doing, as well, perhaps, as a contemporary writer could possibly accomplish. To write fresh-made history is difficult enough had one ample space for all necessary modifications and explanations, but being obliged to condense the narrative, as in Professor Andrews's work, doubly aggravates the undertaking. But as the author says in his preface: "A labor so forbidding might well be declined but for the following considerations: It is hoped that precisely on account of their occurrence in recent times the doings set forth will have a peculiarly living interest; that the work may here and there rescue from oblivion some significant deed which would surely meet that fate were the recording deferred, and that prospectors traversing this forest hereafter may get on better for our toil in blazing the path."

President James L. Antry, of the Corsicana (Texas) Commercial Club, advises the Manufacturers' Record of a recent shipment of petroleum from the oil wells at that point. He states that an analysis shows the oil to be superior to the Pennsylvania product in quality. It is being used as fuel in local factories. The Corsicana Oil Development Co. is shipping the product.

The wonderful advancement of the foreign trade through Gulf and South Atlantic ports is now commanding world-wide attention. This movement is of importance to every business man in Europe and America, because it means a revolution in many lines of trade, the building of new railroads and new cities, and the development of vast industrial interests. You can keep more fully posted on this by reading the Manufacturers' Record than in any other way. We invite your subscription. Price \$4 a year; \$6.50 to foreign countries.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in any town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and even then they must expect the return of some letters, because of the lack of knowledge on the part of postmasters of all new companies. Criticisms and complaints are invited, as they will the better enable us to guard against errors.

ALABAMA.

Birmingham—Iron Furnace.—The Sloss Iron & Steel Co. is putting in a number of new boilers at its No. 4 furnace in North Birmingham.

Birmingham—Iron Furnace and Coal Lands.—A report indicates that the Thomas Furnace Co. will improve its iron furnace. The company's tract of coal land near the furnaces will probably be developed in the near future.

Huntsville—Furniture Factory, etc.—The Huntsville Furniture & Lumber Co. has been incorporated, with a capital stock of \$25,000, for manufacturing furniture, operating lumber mills, etc.; incorporators, Jas. A. Ward, T. V. Pratt, S. J. Mayhew, J. Coons and C. E. Hoy.

Huntsville—Gas and Electric Plants.—The Huntsville & Monte Sano Improvement Co. has obtained privilege to increase its capital stock to \$1,000,000 and to construct gas and electric plants, etc.

Huntsville—Telephone System.—Roy A. Smith, of Athens, Ala., is investigating with a view of establishing a telephone exchange in Huntsville.

Mobile—Telephone Factory.—Paul Minnis is looking for a site for a branch telephone factory, to be established by the Best Telephone Manufacturing Co., of Baltimore, Md.

Montgomery—Improvement Company.—The Montgomery Improvement Co. has been incorporated, with W. B. Davidson, president, and a capital stock of \$5000. It is the intention of the company at present to devote itself to the development of a suburban town to be known as "North Montgomery."

Montgomery—Bridge.—A bill has been introduced in the legislature to incorporate the Montgomery & Elmore Bridge & Improvement Co. The incorporators are P. A. Buyck, W. P. Gaddis, Belton Mickle, F. M. Billing, B. J. Baldwin and J. A. Lancaster. The purpose of this company is the construction of a bridge across the Alabama river from Montgomery into Elmore county; capital stock \$40,000.

Montgomery—Bridge, etc.—A bill has been

introduced in the legislature for the incorporation of the Montgomery-Elmore Bridge & Improvement Co., with a capital of \$50,000; incorporators, P. A. Buyck, W. P. Gaddis, Belton Mickle and others.

Oxford—Tile and Pottery Works.—The Dixie Tile & Pottery Co. has completed the erection of its works and commenced operations.

Tusculum—Road Improvements.—A bill has been introduced in the legislature providing for an election to vote on issuing \$100,000 of bonds for road improvements in Colbert county. J. N. Thompson, J. C. Holesapple and Richard Thurmond are to be road commissioners if the vote is favorable. March 15 is the date set for the election.

ARKANSAS.

Jamestown—Mercantile.—The Jamestown Mercantile Co. has been incorporated, with W. C. Weaver, president, and W. I. R. Howard, secretary-treasurer; capital stock \$25,000.

Little Rock—Printing Works.—The Little Rock Printing Co. has been incorporated, with capital stock of \$15,000, to continue the Brown printing plant; R. L. Thompson, secretary.

FLORIDA.

Deland—Cigar Factory.—Negotiations are in progress for the establishment of a cigar factory. J. Frank Alldis, assistant secretary Board of Trade, can be addressed for information.

Fort Myers—Cannery.—F. W. Libby will establish a cannery for oysters, fish and turtle.*

Jacksonville—Steamboat Company.—Geo. A. De Cottes and others have incorporated the Florida Steamship Co., with a capital stock of \$40,000, to operate a steamboat line.

Plant City—Saw Mill.—R. B. McLendon and Allen Spier have erected a saw mill.

GEORGIA.

Athens—Cotton Mills.—The Athens Manufacturing Co. will issue \$100,000 of bonds for the purpose of putting in new machinery and making other improvements in its mills.

Carrollton—Cotton Mill.—A committee has been appointed to investigate the advisability of establishing a 10,000-spindle mill. L. C. Mandeville is said to be interested.

Cedartown—Planing Mill.—Townsend West and Ham Jones have established a planing mill, as stated last week. They will handle pine and oak lumber, sash, doors, blinds, etc., and will enlarge as opportunity affords until plant is complete; firm name West & Jones.

Eatonton—Water Works.—Walter & Wagner are about to commence work on their contract for constructing water works for the city.

Gainesville—Chair Factory.—G. N. Owen is erecting a chair factory, as recently noted.*

High Falls—Water-power Development and Electric Plant.—Boyd & Grantland have completed arrangements for the development of water-power and the transmission of same by electricity to Griffin, a distance of fifteen miles. Moore & McCrary, of Atlanta, Ga., are the engineers of the proposed plant, and have plans and specifications on file at their office for the inspection of bidders. Proposals for furnishing the machinery will be opened April 1.*

Macon—Refrigerator.—The Armour Packing Co., referred to last week, will build a large refrigerator for packing its own goods. The building will be of brick, 44x150 feet, with latest improvements, including elevators, overhead tracks and scales; all machinery purchased.*

Macon—Shoe Factory.—The Empire Shoe Manufacturing Co., recently organized and operating a baby-shoe factory, will put in some additional machinery to increase its facilities. Address T. S. Brantley, superintendent.

Poulan—Cotton Mill.—A cotton mill will be erected, and work on it has commenced. The mill building will be 60x200 feet in size, and 200 looms for weaving will be put in. J. H. Bromley is said to be interested.

Rome—Charcoal Ovens.—The Rome Iron Co. is making estimates to build twenty new charcoal ovens at its Rome furnace.*

Savannah—Ice Factory.—The Crystal Ice Co., M. A. O'Byrne, president, and S. J. Whitesides, secretary, is making arrange-

ments to re-equip and put in operation its ice factory.

Summerville—Water Works.—The city will hold an election on March 1 to determine the issuance of \$50,000 of bonds for the construction of a system of water works. Address the mayor.

KENTUCKY.

Lexington—Distillery.—Financial arrangements have been made with the Harrisburg (Pa.) Trust Co. by the James E. Pepper Co., enabling the company to put in operation at once its distillery. The company is considering the increase of its capital stock to \$600,000. Of the new company Colonel Pepper will be president; A. G. Kinsley, of the Harrisburg Trust Co., vice-president, and James E. Hubbell, secretary-treasurer.

Louisville—Water-power Development.—The Commercial Club continues to interest itself in the project to develop the water-power of the Ohio river falls. One plan proposed would cost from \$100,000 to \$200,000. J. T. Gathright, of Louisville; Henry Goet, of New Albany, Ind., and others are interested.

Newport—Rolling Mill.—The Newport Rolling Mill has resumed operations, giving employment to 400 men.

Paducah—Grain Elevator.—J. T. Harahan, second vice-president of the Illinois Central Railroad, informs us that there is nothing in the reports that the company will build a grain elevator in Paducah.

Paducah—Sewerage System.—J. H. Elliott, of Memphis, Tenn., has redistricted the city of Paducah for sewerage system, to be constructed at cost of \$63,000. Address the mayor.

LOUISIANA.

New Orleans—Cotton Compress.—Lehman, Sterns & Co. have purchased for \$40,000 the Columbia cotton compress and will operate same.

New Orleans—Sugar Mill, etc.—The Bradish-Johnson Co., Limited, has been incorporated, with capital stock of \$180,000, to continue the operation of the Johnson estate, including sugar mill, etc.

New Orleans—Cotton Compress, Wharves, etc.—The New Orleans & Western Railroad has authorized a second mortgage of \$2,000,000. About \$750,000 of this amount will be issued at the present time, and the funds so obtained will be expended on the erection of another cotton compress, extensions of wharves, erection of electric cranes, etc., at Port Chalmette, near New Orleans. These improvements will be made during the spring and summer months, so that the company can handle a larger business during the coming cotton year. Charles B. Van Nostrand, vice-president, of New York city, office 66 Wall street, or W. C. Dotterer, manager, New Orleans, can be addressed for further information.

Plaquemine—Iron Bridge.—The town council has decided upon the construction of an iron drawbridge. For information address M. L. Levy, clerk.*

Sulphur—Sulphur Wells.—The Union Sulphur Co. is drilling new wells. Present wells are flowing and shipments are being made to New York.

MARYLAND.

Baltimore—Brick and Terra Cotta Works.—The Pitcher & Creager Brick Co. has been incorporated, with Noble H. Creager, president, and Joseph Guild Cook, secretary-treasurer. The capital stock is \$100,000. The company has incorporated for the purpose of continuing the business of Pitcher & Creager, manufacturers of brick and terra cotta.

Baltimore—The Baltimore Fruit Auction Co. has been incorporated by John H. Seward, Robert A. Tucker, John A. Little and others, with a capital stock of \$25,000.

Baltimore—Casino, etc.—The Belvidere Park Co. has been incorporated by John Tjarks, Edward D. Huneke, Albert G. Struven, Harry Pierson and others, with a capital stock of \$50,000. It is the intention of the company to improve as a resort Belvidere Park by the erection of several buildings, including a \$20,000 casino with seating capacity of 2500, a number of cottages, etc.

Baltimore—Water-works Extensions.—The city water board has about decided on plans for extending the city's water supply. The plans are by Samuel M. Gray, of Providence, R. I., consulting engineer of the board. The new pumping station will con-

sist of a main building, 150x125 feet in size, with smokeless smokestack fifteen feet thick at base, 150 feet high, with boiler-room fifty feet wide and 125 feet long, with a cellar underneath ten feet high, wherein will be located storage-rooms for coal, with a total capacity of about 1000 tons. For first use four 800 horse-power boilers will be erected, which can be increased to 1600 horse-power if desired, and for which boilers the contract was awarded by the board to the National Water Tube Boiler Co., of Brunswick, N. J., at an approximate cost of \$9000 for the four boilers. These boilers will be fitted up with the Roney mechanical stokers, doing away with hand labor in feeding them, the coal being sent by chutes from the bins overhead into the stokers, which will then carry the coal into the furnaces. The pumproom will be 65x95 feet, and will be arranged to accommodate three Worthington triple-expansion high-duty pumps, each with a capacity of 17,500,000 gallons per day. Only two pumps will be erected, for which a contract was awarded to Henry R. Worthington, Brooklyn, N. Y., for \$92,000 for the two pumps. The pumproom will be provided with a traveling crane overhead, with ten tons capacity, with blocks and chains to lift heavy pieces of machinery and move them from place to place. Under the pumping-room, which is on the south side of the building, will be a cellar, throughout which all the large suction and discharge pipes will be located, and which will be so arranged that each engine can be used separately, so that water can be forced into the high service or middle service, or can be used altogether. Between the pump and boiler-rooms will be arranged office and toilet-rooms, etc., for the force of men at the station. The cost of the building is estimated at \$90,000.

Cumberland—Snap Factory.—William McKinley has invented a patent snap which he will have manufactured.

Harford—Creamery.—John L. Scarborough and others have incorporated the Prospect Creamery Co.

Hoffmansville—Paper Mills and Gold Mining.—The Maryland Manufacturing & Supply Co. will be organized and incorporated by M. L. Smyser, of Lewiston, Pa.; L. M. Sturgis, G. W. S. Hoffman and W. E. Hoffman, of Baltimore, with a capital of \$75,000, one-half of which will be paid in at once. The company will buy and operate two paper mills at Hoffmansville and greatly enlarge them, introducing the manufacture of paper of every kind. The company will also develop gold and manganese deposits which are found on its property. For further particulars address Littleton M. Sturgis, president, 351 Law Building, Baltimore.

MISSISSIPPI.

Hazlehurst—Ice Factory.—W. J. Rhodes, of New Orleans, and George Ard, of Hazlehurst, will build a five-ton ice factory.

Holly Springs—Water Works.—The city continues to contemplate the construction of a water-works system. Hydraulic engineers are being consulted about the project. For information address the mayor.

Vicksburg—Furniture Factory, etc.—The Vicksburg Furniture Co., recently reported as erecting a furniture factory, has made arrangements with J. R. Rollson, of Detroit, Mich., by which it will manufacture the Rollson patent bed spring.

MISSOURI.

Columbia—Coal Lands.—Haskell Withee, of Lacrosse, Wis.; J. C. Merchant, of Black River Falls, Wis.; William Brydon and William McMillan, of Neilsville, Wis., have been investigating near Columbia with a view of buying coal lands for development.

Kansas City—Mercantile Company.—The Kaw Valley Mercantile Co. has been incorporated by J. J. Armstrong and others; capital stock is \$2000.

Kansas City—Elevator Company.—The United Elevator Co. has been incorporated by Charles F., Charles C. and Max R. Orthwein, with a capital stock of \$25,000.

Kansas City—Glue Factory.—The Schwarchild & Sulzberger Packing Co. has purchased property for \$35,000, on which it will erect a glue factory 150x150 feet, plans for which have been prepared. The company is also reported as to make extensive improvements to its packing-house. Address A. F. Nathan, general manager.

Sedgewick—Woodworking Factory.—The Kansas City & Southern Lumber Co., Bert

Culver, manager, will add a handle factory to its plant.

St. Louis—Real Estate and Investment Company.—The Eads Avenue Real Estate & Investment Co. has been incorporated by G. A. Pauly, August Mende, Allen J. Ripple and others, with a capital stock of \$10,000.

St. Louis—Mantel Factory.—The C. L. Whittemore Mantel Co. has been incorporated by Clinton L. Whittemore, Frank B. George and others, with a capital stock of \$7,000, for the manufacture of mantels, etc.

St. Louis—Sponge Company.—Adolph H. Berg, William H. Kastors and others have incorporated the St. Louis Sponge Co., with a capital stock of \$45,000.

St. Louis—Machinery Company.—The Barry-Wehmiller Machinery Co. has been incorporated by Thomas J. Barry, Alfred H. Wehmiller and others, with a capital stock of \$34,000, for the purpose of manufacturing machinery, etc.

St. Louis—Scale Company.—Fred R. Belt and others have incorporated the Belt-Sutton Scale Co., with a capital stock of \$5,000.

St. Louis—Sash Company.—Joseph Lehnbeuter and others have incorporated the Removable Sash & Weather Strip Co., with a capital stock of \$5,000.

St. Louis—Flour Mill and Flour-machinery Works.—The H. M. Whitney Manufacturing Co., having made satisfactory tests of a new milling process, has decided to erect a flour mill of 250 barrels daily capacity, to be increased to 500 as soon as advisable; will also build a plant for making flour-mill machinery.

NORTH CAROLINA.

Charlotte—Clothing Company.—The Carolina Clothing Co. has been incorporated, with capital stock of \$25,000, by J. A. Solomons and others.

Concord—Cotton Mill.—A bill has been introduced in the State assembly asking for the incorporation of the Coleman Manufacturing Co., with a capital stock of \$200,000, its purpose being the erection of a cotton mill at Concord. This company proposes employing colored labor only in the contemplated mill. W. C. Coleman, a colored lawyer, is pushing the enterprise, and can be addressed for information.

Greensboro—Cotton Mill.—The Hunter Manufacturing & Commission Co. has been organized, with R. G. Vaughn, president; C. G. Wright, vice-president, and J. S. Hunter, secretary-treasurer. The capital stock is \$25,000. Arrangements are being made by the company for the establishment of a plant to manufacture cotton specialties.

Greensboro—Hosiery Mill.—The George Manufacturing Co., organized with S. H. George, president, and Edgar George, secretary-treasurer, will establish a mill for the manufacture of seamless hose.

Henderson—Cotton Mill.—A report says that the Henderson Cotton Mills (5,000 spindles) will increase its capital stock and increase the output about 80 per cent. by the addition of new machinery.

Kernersville—Flour Mill.—Harmon & Reed have closed contract for erection of 60-barrel flour mill, Case Company system.

Wilmington—Distillery.—The Cypress Distilling Co. will shortly resume operations.

TENNESSEE.

Chattanooga—Boiler Works.—Walsh & Weidner will rebuild at once their burned boiler works. In the meantime the damaged plant is enabled to operate to fill orders. Some new machinery will be installed soon.

Chattanooga—Bridge.—A steel bridge will probably be constructed across Sale creek. City Engineer Betts is preparing plans for the proposed structure; bridge to be of steel, 72-foot span, 90-foot trestle, and cost about \$25,000.

Clarksburg—Electric-light Plant.—Thomas Bourne has purchased the plant of the old Clarksburg Electric Light Co. and will operate same.

Erwin—Bridge.—A bill has been introduced in the senate authorizing the issuance of bonds for the construction of a \$50,000 bridge in Unicoi county. Address the county clerk.

Greenfield—Electric-light Plant, Flour Mill and Planing Mill.—It is reported that an electric-light plant, planing mill and flour mill will be erected. No names are as yet named in connection with the report.

Jonesboro—Electric-light Plant.—The erection of an electric-light plant is proposed. The town clerk can probably give information.

Jonesboro—Woodworking Factory.—Rufus Wells contemplates the establishment of a coop, barrel and box factory.

Knoxville—Knitting Mills.—In our issue of February 5 we reported the Knoxville Woolen Mills as to double its capital and equipment. This item should have read the Knoxville Knitting Mills, and does so read in the "Textile Department" of the issue referred to. The Knoxville Knitting Mills' stockholders held their annual meeting last month and decided on the enlargements reported, and are doubtless already arranging for effecting them. George S. Andes, manager of the company, can be addressed for further particulars.

Knoxville—Woolen Mill.—The Knoxville Woolen Mills (see note above) employs about 750 operatives, and during the year has added to its equipment a 5,000-spindle jeans warps mill. The company's capital stock is \$550,000. J. A. McKeldin is secretary-treasurer.

Knoxville—Gold Mines.—The Eureka Gold Mining Co., operating on Coco creek, has applied for a charter. Incorporators are Judge S. T. Logan, J. B. Harrison, Peter Kern, W. A. Galbraith and W. A. Cannon.

McMinnville—Foundry and Machine Shops.—Thomas H. Eastwood will rebuild at once his foundry and machine shops recently burned.

Memphis—Telephone Exchange.—Charles J. Glidden, of Lowell, Mass., vice-president of the Southwestern Telegraph & Telephone Co., and P. G. Reynolds, general superintendent of construction, are in Memphis in conference with President Caldwell and Manager Powell, of the Cumberland Telephone Co., completing arrangements for the extension of the long-distance telephone system from Memphis to Helena, Little Rock and other points in Arkansas and Texas.

Nashville—Shoe Factory.—I. W. Carter & Co. write regarding the shoe factory which it was reported they would establish. The establishment of the factory is about decided on, but nothing definite in the matter will be done for several months.

Newport—Chair Factory.—C. H. Ordway & Son will establish a chair factory.

Sweetwater—Electric-light Plant.—The establishment of an electric-light plant is talked of. The city clerk can possibly inform.

TEXAS.

Angleton—Lumber Company.—Z. T. Cain, James Munson and H. J. Light have incorporated the Brazoria Lumber Co., with a capital stock of \$5,000.

Brenham—Coal Mines, etc.—The Brenham Coal & Mining Co. has applied for incorporation, with capital stock at \$50,000; incorporators, I. P. Simmons and Arthur Wagemann, of Brenham, and John Carlisle, of Chapel Hill. The company will develop coal mines at Briquettes, where it has already commenced work.

Cuero—Telephone Company.—R. A. Pleasants and others have incorporated the Gulf Coast Telephone Co., with a capital stock of \$20,000.

Dallas—Mercantile.—A. J. Rogers and others have incorporated the Rogers-McKnight Mercantile Co., with a capital stock of \$40,000.

Dallas—Lumber Company.—The Clark & Boice Lumber Co. has been incorporated by E. H. Lingo, of Denison; Willard Burton, of Fort Worth, and Ira Stockwell, of Clinton county, Iowa, for the purpose of dealing in lumber, etc. The capital stock is \$50,000.

Galveston—Bicycle Factory.—A. J. Gould, late of Williamsport, Pa., will establish bicycle factory in Galveston; office in the Arrowwanna Building.

Galveston—Sugar-house.—P. J. Miller & Bro. inform us that there is no truth in the report that they will build a new sugar-house.

Gatesville—Mercantile.—R. M. Hill and others have incorporated the Gatesville Supply Mercantile Co., with capital of \$25,000.

Hempstead—Laundry.—J. M. Mims contemplates the establishment of a hand laundry.

Houston—Merchandise Company.—Charles E. Patton, Charles T. Neale and Robert E. Arner have incorporated the Patton-Neale Co., with a capital stock of \$20,000, for the purpose of carrying on a general merchandise business.

Houston—Bridges.—It is said that the Houston, East & West Texas Railroad will construct a number of new bridges of iron to replace present bridges, which were built for narrow-gauge road; M. G. Howe, general manager.

Lampasas—Cattle Company.—J. F. Skinner and others have incorporated the Skinner Cattle Co., with capital stock of \$50,000.

Lufkin—Trading Company.—The Angellina

Trading Co. has been incorporated, with a capital stock of \$20,000, by Sam A. Sanger, of Waco, and others.

Port Arthur—Deep-water Channel.—The Port Arthur Channel & Dock Co. has been incorporated, with a capital stock of \$1,000,000, to construct a deep-water channel across Sabine Lake; also to construct docks and similar facilities for shipping. Incorporators are W. L. Estes and William F. Hudgins, of Texarkana, Texas; A. E. Stillwell, E. L. Martin, C. A. Braley and John McD. Trimble, of Kansas City, Mo. For information it would probably be best to address Mr. Stillwell as mentioned above.

Quannah—Merchandise.—The Griffith Bros. Grocery Co. has been incorporated by W. M. Griffiths, D. F. and F. O. Griffiths, to carry on a general merchandise business; capital stock \$4,000.

San Angelo—Milling Company.—The San Angelo Milling Co. has been incorporated, with a capital stock of \$20,000, for the purpose of dealing in wool, cotton, grain, etc.; incorporators, J. L. Millsbaugh, J. W. Johnson, John P. Lee and others.

San Antonio—Cottonseed-oil Mill.—The erection of a cottonseed-oil mill near San Antonio is contemplated. Address R. J. Hand.

Shiner—Planing Mill and Sash Factory.—Blohm & Schuerbohm are erecting a planing mill and sash factory.

Tyler—Drug Company.—The L. C. Doney Drug Co. has been incorporated, with a capital stock of \$5,000.

Wallisville—Saw Mill.—The Wallisville Lumber Co. will build a new saw mill.

Waxahatchie—Coal Deposits.—It is reported that coal deposits have been found on the property of Blas Baumgartner.

Weatherford—Real-estate Company.—The Weatherford Real Estate Co. has been incorporated by George P. Levy, F. N. Read and O. J. Gorman, with a capital stock of \$30,000.

VIRGINIA.

Charlottesville—Water Works.—The city council has authorized an issue of \$30,000 of bonds, the proceeds of their sale to be devoted to increasing the city's water supply. Address the mayor.

Danville—Laundry.—The Danville Steam Laundry has added new machinery recently. Farmville—Telephone Exchange.—A telephone exchange will shortly be established, building for which will be erected. Address the mayor.

Lynchburg—Railroad Shops.—Regarding the reports that the Southern Railway Co. will build shops near Lynchburg, the chief engineer, W. H. Hudson, states that shops or terminals are not contemplated in Amherst county.

Marion—Copper Mines.—Venable & Co. will probably establish a plant for the development of their copper mines reported in last issue.

Norfolk—Cold-storage Plant.—The Chr. Heurich Brewing Co., of Washington, D. C., will build cold-storage plant, warehouses, stables, etc., in Norfolk, as mentioned last week, but in all probability will not begin work on same until next fall.

Norfolk—Grain Elevator.—The Illinois Central Railroad Co., S. Fish, Chicago, Ill., president, and the Louisville & Nashville Railroad Co., J. G. Metcalf, general manager, Louisville, Ky., have, it is stated, obtained an option on property in Norfolk, the purchase price of which is \$130,000, for a terminus. The erection of a grain elevator is said to be a part of the project.

Norfolk—Telephone Exchange.—The Southern States Telephone Co. will shortly commence work on the extension of its lines; Charles E. Fink, president.

Norfolk—Warehouses, Docks, etc.—In connection with the belt line to be built by the New York, Philadelphia & Norfolk Railroad, will be a number of warehouses, docks, roundhouses, bridges, terminals and other improvements. Over \$250,000 will be expended on the various improvements. A. J. Cassatt, 26 South 15th street, Philadelphia, Pa., president of the company, can be addressed for particulars.

Norfolk—Telephone Franchise.—The American Telephone & Telegraph Co. has applied for franchise to establish long-distance system. Address care of Richard Walke.

Orange—Saw Mills.—Alexander Gilmer is putting in two band mills. Clark Bros., Belmont, N. Y., have contract.

Portsmouth—Butter-dish Process.—A. B. Griffin informs the Manufacturers' Record that he will manufacture butter and lard dishes from paper by a patent stiffening process of his own. Address 612 Queen street.

Richmond—Coal Company.—The Powhatan Coal Co. has been incorporated, capital stock \$10,000, to deal in fuel; Julius Baker, secretary.

Richmond—Tobacco Stemmer.—James N. Boyd states that he will rebuild at once that part of his stemmer recently burned.

Richmond—Condiment Factory.—The C. F. Sauer Co., 1328 Main street, manufacturer of flavoring extracts, will add to its product pickles, catsup, sauces and similar goods. About \$10,000 will be invested eventually in this branch of the business; information solicited regarding the new products. The company will also put in a spice mill.

Roanoke—Broom Factory.—Negotiations are pending for the establishment of a broom factory. For information address Paul Scherer.

WEST VIRGINIA.

Charleston—Saw Mill.—T. O. Meeker will begin at once the erection of a saw mill.

Davis—Mercantile and Manufacturing Company.—The Laboring Man's Mercantile & Manufacturing Co. has been incorporated by D. C. Carder and others.

BURNED.

Carlisle, Ky.—The St. Cloud Hotel; loss about \$20,000.

Fort Meade, Fla.—The Bell phosphate works near Fort Meade; loss about \$30,000.

Newport, Ky.—The mill of the Wehenpohl Milling Co.; loss about \$15,000.

Weverton, Md.—The Weverton Flouring Mills; estimated loss \$12,000.

BUILDING NOTES.

Anderson, S. C.—Courthouse.—The erection of a new courthouse is talked of. Address the mayor.

Angleton, Texas—Courthouse and Jail.—Contract has been awarded to Thomas Lovell at \$30,000 for the erection of the courthouse. Contract for building the jail was let to the Diebold Safe & Lock Co., H. M. White, Houston representative, at \$7,850.

Athens, Ga.—Laboratory.—The Athens University is investigating with a view to locating site for the erection of its new electrical and chemical laboratory. The building will cost \$25,000, appropriated by the legislature for that purpose.

Augusta, Ga.—Depot.—The Charleston & Western Carolina Railroad will build a freight depot. A. W. Anderson, local superintendent, can be addressed.

Baltimore, Md.—Casino.—The Belvidere Park Co. intends building a \$20,000 casino. For information address John Tjarks, Darley Park, Baltimore, Md.

Baltimore, Md.—Warehouses.—In a letter to the Manufacturers' Record, Deford & Co., tanners, state that the announcement made last week that they would erect a six-story warehouse 25x90 feet at No. 38 South Calvert street is correct.

Brunswick, Ga.—Courthouse.—The Glynn county commissioners want plans for a courthouse to cost \$30,000, and one to cost not more than \$40,000. For particulars address James S. Wright, chairman.

Chase City, Va.—Hotel.—W. K. Holt has prepared plans for the 30-room addition to the hotel of the Chase City Mineral Water Co., reported last week.

Galveston, Texas—Courthouse and Jail.—A resolution has been adopted providing for an issue of \$250,000 of bonds for the building of the new courthouse previously noted and an addition to the county jail. Address county clerk.

Galveston, Texas—Jail Annex.—Plans and specifications will be received until March 8 for an annex to the county jail; annex to be three stories high and cost \$30,000. Address George H. Law, clerk county court.

Griffin, Ga.—Jail.—The erection of a jail to cost \$5,000 is contemplated by Spalding county. Address the county commissioners.

Hammond, La.—Hotel and Sanitarium.—Efforts are being made for the organization of a \$40,000 stock company to erect a hotel and sanitarium. For further information address E. W. Magann.

Herrman, Mo.—Courthouse.—Contract has been awarded to H. J. Wallaw, of Jefferson City, Ind., at \$41,500 for the erection of a courthouse.

Huntsville, Ala.—Jail.—Madison county will build a jail to cost \$30,000. Address the county clerk.

Kansas City, Mo.—Office Building.—The Board of Trade contemplates the erection of a \$200,000 building. Plans for a seven-

story 100x125-foot fire-proof building have been prepared.

Knoxville, Tenn.—Market-house.—The city is about to make arrangements for the erection of its proposed \$30,000 market-house. Plans will be wanted. For particulars address George W. Brown, alderman.

Knoxville, Tenn.—Church.—C. F. Barber & Co. have prepared plans for a \$4000 structure to be erected by the First Congregational Church. Address the pastor.

Louisville, Ky.—Buildings.—Building permits have been issued to Karl Land for the erection of a cottage to cost \$1000; to J. M. Burnett for a two-story frame building to cost \$1800.

Macon, Ga.—Hotel.—The Brown House will be enlarged by the erection of fifty additional rooms. Address T. C. Parker, manager.

Madisonville, Ky.—Theatre.—M. B. Ray will build a theatre to cost \$20,000.

McEwen, Tenn.—College Building.—Plans and specifications have been prepared for the erection of a brick college. For further information address J. C. Coleman.

Memphis, Tenn.—Market-house.—The erection of a new market-house is talked of. Carl Field is said to be interested.

Nashville, Tenn.—Restaurant.—The Wm. Gerst Brewing Co. will erect a \$7000 restaurant at the Tennessee Centennial Exposition.

New Orleans, La.—Buildings.—Building permits have been issued to James Finney for one double and one single cottage to cost \$1800; to A. Oldstein for a two-story frame dwelling to cost \$7200; to Mrs. Hollander for a one-story double cottage to cost \$1800; to M. J. Rice for four one-story dwellings to cost \$2800.

New Orleans, La.—G. James Jackson will erect a \$23,000 building.

Paulding, Miss.—Jail.—The board of supervisors of Jasper county have adopted plans and specifications for the erection of a jail. For information address either D. P. Dear or T. J. Sarter, members of the board.

Richmond, Va.—Alms-house.—An appropriation of \$20,000 will be made for an extension of the White Alms-house, plans for which have been prepared by the city engineer. Address the mayor.

San Antonio, Texas.—Hotel.—Negotiations are pending for the erection of a \$300,000 hotel. For further information address P. H. Sweeney, care of Business Men's Club.

Sandersville, Ga.—School.—The city will build a \$10,000 school building. Address the mayor.

Shiner, Texas.—School.—The Catholic Church is erecting a convent school. Address the pastor.

Washington, D. C.—Rectory.—The Church of the Holy Innocents will build a rectory to cost \$5000; Rev. R. A. Tuft, pastor.

Washington, D. C.—Dwellings.—Joseph C. Johnson has made plans for five dwellings to cost \$4000 each; Robert Head has made sketches for ten three-story dwellings to cost \$5000 each; W. P. Williamson has contracted with Wm. A. Kinnell for office building to cost \$35,000.

Water Valley, Miss.—Courthouse.—The board of supervisors of Yalobusha county have decided to advertise for bids for the erection of the courthouse which was authorized by the last legislature. The cost will be \$20,000.

Williamson, W. Va.—Courthouse.—Wilson & Smith, of Bristol, Tenn., who have contracted for the erection of the \$45,000 courthouse, are about to commence work on it.

RAILROAD CONSTRUCTION.

Railways.

Aberdeen, N. C.—It is now reported that the company which proposes to extend the Moore County road to Concord is now being organized and is composed of Boston parties. W. B. Eekhout is general manager of the Moore County line in operation at present.

Americus, Ga.—The Georgia & Alabama, it is stated, is considering an extension of its Fitzgerald division to Waycross. The distance is about sixty miles. John S. Williams, at Richmond, is president.

Augusta, Ga.—It is now reported that the Tennessee, Georgia & Atlantic proposed road will make a connection with the East & West Railroad of Alabama and the Charleston & Western Carolina, forming a system from Birmingham to Chattanooga and Augusta, also Port Royal, S. C. It is reported that this will be accomplished by extending the East & West road from Pell

City, Ala., to Birmingham and from Cartersville to Lula, Ga. The United States Construction Co., of which F. M. Ferguson is president, and E. C. Machen, 60 Wall street, New York, secretary, has been formed to build the Tennessee, Georgia & Atlantic. C. P. Ball, Cartersville, Ga., is manager of the East & West road.

Bainbridge, Ga.—Prest. C. H. Caldwell, of the Bainbridge Northern Company, advises the Manufacturers' Record that ten miles of this line have been completed and work is now progressing on three miles additional. Everything needed has been purchased.

Ballinger, Texas.—It is stated that New York capitalists contemplate the construction of a road from Ballinger to Colorado City, on the Texas & Pacific, about ninety miles, and a preliminary survey of the line is being made.

Barnwell, S. C.—Receiver Channing M. Ward, of the Greenwood, Anderson & Western road, has made a report to the court favoring the completion of the road to Batesburg at once. It is nearly graded to that point. Mr. Ward's temporary address is Charleston.

Brenham, Texas.—The Southwest Texas Railroad Co. has been chartered to build a line from Brenham to Eagle Pass, 550 miles long in all. The incorporators include I. D. Roger, of New York; James Kerr, of Washington; William Muir, of New York, and Louis J. Wortham, Ben S. Rogers, D. McNeill Turner and George M. Edgerton, all of Texas.

Camden, Ala.—It is rumored that the Mobile & Ohio Company is considering the idea of building the proposed road between Montgomery and Camden, which Sol D. Bloch and others, of Montgomery, are promoting. J. G. Mann, of Mobile, is manager of the Mobile & Ohio.

Columbia, Mo.—The Boone County Coal Co., organized to develop coal deposits in the vicinity of Columbia, has determined to build a railroad in Ralls county to reach the deposits and to connect with the Wabash system. Haskell Withers, of La Crosse, Wis., and William McMillen, of Neilsville, Wis., are among those interested.

Denison, Texas.—E. H. Lingo, of Denison; Willard Burton, of Fort Worth, and others have formed a company to build a line in Cass and Marion counties for lumbering purposes.

Gainesville, Ga.—It is reported that the Georgia Railroad Co. intends to change its branch from Gainesville to Jefferson and Social Circle to standard gage. It is fifty-two miles long. A. D. Candler, at Gainesville, is president.

Gurley, Ala.—Frank B. Gurley informs the Manufacturers' Record that Boston people have been negotiating with the view of securing the Gurley & Paint Rock road, but that nothing has as yet been accomplished.

Haylow, Ga.—It is reported that work has begun on the road in which the G. S. Baxter Co. is interested. It is to be ten miles long and is to connect with a line which terminates at Crawford, Fla. It is to be called the Georgia & Florida Railroad.

Hearne, Texas.—The Gulf & Brazos Valley Company has been chartered, with \$100,000 capital, by Jeff D. Reagan, Edward Fox and others. The company is promoting a line from Hearne to Waco through Robertson, Falls and McClennan counties.

Hillsboro, Texas.—It is stated that the Houston & Texas Central Company will construct a branch from Wortham Station to Hillsboro. The distance is about forty-five miles. G. A. Quinlan, vice-president, may be addressed at Houston.

Houston, Texas.—It is stated that the Houston, East & West Texas Company will build a number of new bridges along the line and will place heavier rails on about seventy-five miles of the right of way. M. G. Howe, general manager, may be addressed at Houston, Texas.

Kansas City, Mo.—The section of the Kansas City, Pittsburg & Gulf between Horatio and Fort Smith has been graded to a point forty miles north of Horatio. Track is being laid at the rate of two miles per day where possible. A. E. Stilwell, at Kansas City, is vice-president of the company.

Marshall, Texas.—The Brazos & Rio Grande Company has been chartered to build a line through the Hamilton county coalfields. L. W. Lloyd is to be manager of the company. It is stated that work is to begin immediately. The line is projected from Hillsboro, in Hill county, to Hamilton, in Hamilton county, a distance of sixty miles. D. C. Plumb, of Fort Worth, is also interested.

Mobile, Ala.—Grading is being done on the route of the Mobile, Jackson & Kan-

sas City line from the city limits to a point twenty-eight miles distant. F. B. Merrill is general manager.

Portsmouth, Va.—Vice-President W. A. Patton, of the New York, Philadelphia & Norfolk, advises the Manufacturers' Record that the proposed belt line in the suburbs of Portsmouth will be about four miles in length. He confirms the statement that the company has bought land at Port Norfolk for terminals. His address is 26 South 15th street, Philadelphia.

Queenstown, Md.—It is stated that the Queen Anne's Railroad is to be completed to the terminus, Lewes, Del., at once. The Peninsular Construction Co., which is building the line, has purchased the necessary rails to complete it. The last section is fifteen miles long. W. H. Bosley, corner North and Fayette streets, Baltimore, may be addressed.

Sewell, W. Va.—A railroad has been completed from Sewell to coal deposits in the vicinity and is now in operation. It is thirteen miles long. H. Firmstone, Longdale, Va., is reported as president of the company, and J. A. McGuffin, at Sewell, manager.

Trinity, Texas.—The Sabine & Trinity branch of the Missouri, Kansas & Texas, it is reported, may be extended from Colmesneil, its eastern terminus, to Sabine Pass. The distance is about ninety-five miles. J. N. Simmons, vice-president, may be addressed at Dallas, Texas.

Washington, D. C.—It is stated that the Washington & Gettysburg Electric Company, in which F. C. Drane and N. Winslow Williams, of Baltimore, are interested, has arranged with a New York syndicate to underwrite bonds for seventy miles at the rate of \$20,000 per mile. It is also stated that the company has secured \$150,000 in stock subscriptions. The District commission is considering the matter.

Washington, D. C.—The District of Columbia commission has had plans prepared for the construction of a new terminal station for the Pennsylvania Railroad, to be located between Seventh, Ninth and B streets. The plans include the building of several elevated tracks and the change of the company's terminal yards.

Westminster, Md.—Secy. C. H. Vanderford confirms the statement that Stillson Hutchins and others, of Washington, have become interested in the proposed road from Washington to Gettysburg by way of Westminster. This is the company which Alexander D. Anderson, of Washington, is promoting. Surveys are now being made.

Street Railways.

Augusta, Ga.—The North Augusta Land Co., it is stated, has decided to construct an electric line to this suburb from the city. Walter M. Jackson is general manager of the company.

Rome, Ga.—The Rome Street Railway, it is stated, is to be extended about three miles to a resort in the suburbs. J. A. Stansbury is president.

St. Louis, Mo.—It is reported that the St. Louis & Kirkwood Railway Co. will build an electric line on Shaw avenue. J. D. Houseman is president.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Boarding, etc.—W. K. Holt, architect and builder, Chase City, Va., wants catalogues, prices, etc., of boarding and other wall decorations.

Boiler and Engine.—D. M. Angle, Houston, Texas, wants to buy a portable boiler and engine, thirty-five or forty horse-power; must be in good running order; state size of cylinder; also wants portable boiler, forty horse-power.

Boilers.—Alexander Gilmer, Orange, Va., wants names and addresses of manufacturers of boilers.

Boilers and Engines.—B. E. Bristol & Co.,

Bogue Chitto, Miss., will put in three 60-inch by 16-foot boilers, complete with fixtures; also one or two pumps, 9x5½x10, or one 10x6x12, and one small duplex pump. Second-hand in good order will do.

Bottles.—J. M. Mims, Hempstead, Texas, wants to buy a lot of second-hand soda-water bottles (eight-ounce).

Bridge.—The town council of Plaquemine, La., will soon be ready to contract for the construction of an iron drawbridge. Address M. L. Levy, clerk.

Brush Machinery.—Frank P. Read, Highland Springs, Va., wants addresses of firms supplying handles, brushes, bristles, ferules, machinery, etc., for the manufacture of brushes.

Brush Machinery.—F. J. Harker, P. O. Box 29, Highland Springs, Va., wants the addresses of parties manufacturing machinery for the manufacture of all kinds of brushes, brooms, etc.

Building Materials.—Walsh & Weldner, Chattanooga, Tenn., will probably need lumber for boiler-works building.

Canning Machinery.—F. W. Libby, Fort Myers, Fla., wants to buy machinery for fish, turtle and oyster cannery.

Carpet Looms.—The Knoxville Carpet Renovating Works, Knoxville, Tenn., wants prices, etc., on a first-class second-hand ingrain-carpet looms.

Carpet-sewing Machine.—The Knoxville Carpet Renovating Works, Knoxville, Tenn., wants prices, etc., on a first-class second-hand carpet-sewing machine.

Carving or Engraving Machinery.—See "Woodworking Machinery."

Coke Ovens.—The Rome Iron Co., Rome, Ga., is taking estimates on the construction of twenty charcoal ovens.

Cotton Mill.—See "Carpet Looms."

Cotton-mill Machinery.—See "Knitting Machinery."

Creamery Machinery.—The Iron City Manufacturing Co., Attalla, Ala., wants addresses of makers of cheese-factory machinery.

Electric-light Plant.—See "Water Works."

Electric-power Plant.—Sealed proposals will be received at the office of Moore & McCrary, of Atlanta, Ga., by Boyd & Grantland, of Griffin, Ga., on April 1 for all machinery and labor required for power transmission from High Falls to Griffin, fifteen miles; machinery to consist of two 500-kilowatt generators, alternators, transformers, water wheels, flume, pole lines, etc.; plans and specifications on file with Moore & McCrary; right reserved to reject any and all bids. Moore & McCrary are the engineers.

Electrotypes.—The Graphic Publishing Co., F. W. Schaeper, manager, Louisville, Ky., will consider estimates on half-tones.

Elevator.—The C. F. Sauer Co., 1326 Main street, Richmond, Va., will probably need a new power elevator.

Engine and Boiler.—Harmon & Reed, Kernersville, N. C., will want an eighth horse-power boiler and a fifty horse-power automatic engine.

Engines.—R. E. Grant, Middleport, Ohio, wants to buy a 250 to 300 horse-power second-hand Corliss engine at a bargain; also wants two smaller engines. Give full particulars in first letter.

Fat Pine Kindling.—The Waynesville Coal Co., Waynesville, N. C., wants addresses of dealers in fat pine kindling.

Feather Renovator.—The Knoxville Carpet Renovating Works, Knoxville, Tenn., wants a first-class second-hand feather renovator. Address with price.

Fire-alarm System.—H. L. Wright, receiver Palestine Water & Power Co., Palestine, Texas, wants prices on fire-alarm system.

Gasoline Engine.—T. H. Eastwood, McMinnville, Tenn., will need a fifteen horse-power gasoline engine.

Granulated Cork.—The Armour Packing Co., Macon, Ga., will need granulated cork.

Hardware.—The Cypress Tank & Manufacturing Co., Limited, Patterson, La., wants prices on hardware to be used in the manufacture of stepladders.

Hose.—The city of New Berne, N. C., wishes to buy 1000 feet of double jacketed hose; samples, prices and terms to be submitted to Hugh J. Lovick, city clerk.

Ice Plant.—The Perry Manufacturing Co., Perry, Ga., is in the market for the smallest ice plant manufactured.

Iron-working Machinery.—H. P. Blount, Atlanta, Ga., wants addresses of makers of machinery for rolling cotton ties.

Jail Cells.—Frank M. Allen, Lithonia, Ga., wants to contract for eight steel cells for county jail; four cells to be of five-ply

chrome steel 6-6-inch by 8-0-inch; other four to be of Bessemer steel, 6-0-inch by 8-0-inch; all to have modern locking arrangements.

Knitting Machinery.—W. N. Harris, Winton, N. C., wants to buy knitting and webbing machinery.

Laundry Machinery.—J. M. Mims, Hempstead, Texas, wants addresses of manufacturers of laundry (hand) machinery, supplies, etc.

Machine Tools.—The Mobile Light & Railway Co., Mobile, Ala., wants to buy new or second-hand lathe in good condition, 20 to 24-inch swing, eight to 12-foot centres; also 18-inch single-spindle drill press.

Machine Tools.—Walsh & Weldner, Chattanooga, Tenn., will probably need a 50-foot five to 10-ton travelling crane, 16-foot bending rolls, flange punch and shears and emery grinders.

Machine Tools.—The Magnolia Heating & Plumbing Co., Houston, Texas, wants to buy a Forbes pipe-cutting and threading machine of capacity to handle from six-inch pipe down to smaller sizes.

Machine Tools.—T. H. Eastwood, McMinnville, Tenn., will need planer, drill press, reamer, etc.

Machine Tools.—The G. P. Bamberg Co., Bamberg, S. C., wants bids on machine tools for shop.

Mattress Machinery.—The Knoxville Carpet Renovating Works, Knoxville, Tenn., wants prices on complete outfit of most improved machinery for making mattresses.

Pulleys and Shafting.—The C. F. Sauer Co., 1326 Main street, Richmond, Va., will probably need pulleys and shafting.

Pumps.—See "Boilers and Engines."

Railway Equipment.—The John G. Hurkamp Co., Fredericksburg, Va., is in the market for a small standard-gage shifting locomotive, about eight to ten tons; want engine at low price.

Railway Equipment.—D. M. Bradham, Packsville, S. C., wants a small tram engine and rails for same.

Railway Equipment.—S. F. Shaw, Parkersburg, W. Va., wants to buy small horse cars, about 10-foot cars, of four-foot eight-and-one-half-inch gage; must be second-hand in good order.

Rolling Mill.—See "Iron-working Machinery."

Roofing.—W. K. Holt, Chase City, Va., wants prices on composition roofing.

Spice Mill.—The C. F. Sauer Co., 1326 Main street, Richmond, Va., wants to buy a spice mill.

Steel Cells.—See "Jail Cells."

Switchboard.—The Paris Telephone Co., Paris, Ky., wants to buy a switchboard for telephone exchange.

Telephone Equipment.—H. L. Wright, receiver Palestine Water & Power Co., Palestine, Texas, solicits prices on the construction of two to two and one-half miles of telephone line for use at plant; 'phones to be furnished by contractor.

Tobacco Machinery.—The Iron City Manufacturing Co., Attalla, Ala., wants addresses of makers of tobacco machinery.

Water Wheels.—See "Electric-power Plant."

Water Works.—Sealed proposals will be received until March 8 for the construction of the water-works and electric-light plant for the city of Newberry, S. C. Specifications will be furnished on application. Address James McIntosh, chairman of committee. (See advertisement in Manufacturers' Record.)

Woodworking Machinery.—B. E. Bristol & Co., Bogue Chitto, Miss., will put in new head blocks and set works.

Woodworking Machinery.—Ed T. Roane, Lexington, Ga., wants information about shingle machinery.

Woodworking Machinery.—Moore & Miller, Jasper, Ala., want a heavy planer and matcher; second-hand will do.

Woodworking Machinery.—Weesner & Holland, Salem, N. C., want to hear from firms in the bent chair stock business.

Woodworking Machinery.—The Brunswick Door Manufacturing Co., Brunswick, Ga., wants a machine for cutting pockets in pulley stiles for window frames; also will want sash, door and blind machinery.

Woodworking Machinery.—The Ober Lathe Co., Chagrin Falls, Ohio, wants addresses of makers of machinery for engraving or carving on wood.

Woodworking Machinery.—G. N. Owen, Gainesville, Ga., wants to correspond with manufacturers of chair machinery.

TRADE NOTES.

Success from the Start.—About two months ago the Port Norfolk Manufacturing Co., of Port Norfolk, Va., began operations as a maker of tables, molding, stair rails, etc., and it now has a full supply of orders.

Power for the Exposition.—The Tennessee Centennial Exposition Co. has purchased from the Westinghouse Machine Co. four Westinghouse compound engines, each 400 horse-power. The engines will be installed in the exposition's power-house.

Tested Steel Chains.—In addition to its "Tenacity" long-link steel chains, its "Zel-nicker" ring and chain dogs, the Southern Log Cart & Supply Co., of Mobile, Ala., is making a specialty of an extra high grade of tested steel chains for contractors and logmen.

A Porcelain-like Finish.—For buildings that must be frequently cleaned, such as hospitals, schools, dairies, etc., is made the Victoria enamel paint by Otto Goetze, New York. The paint gives a porcelain-like finish to wood, metal or other material, is quick drying and is ready-mixed.

Change of Agents.—Mr. Lester E. Wood, formerly sales agent in New York city for the Anniston Pipe & Foundry Co., of Anniston, Ala., has severed his connection with that concern, which will be hereafter represented in the Eastern market by Mr. H. W. Coleman at Philadelphia, with offices in the Drexel Building.

Two Engines Installed.—The Wilmington Gas Light Co., Wilmington, N. C., is installing a 350 horse-power horizontal cross-compound engine built for them by the Ball Engine Co., Erie, Pa. Messrs. Crook, Horner & Co., representing the same company, have recently placed a sixty horse-power engine, directed connected to twenty-five horse-power General Electric dynamo, in the Church Home and Infirmary, of Baltimore, Md.

Steam Capstan Windlass.—About forty vessels are now in course of construction at lake ports, nearly all of which, and more markedly the large tonnage ones, call for the "Providence" patent steam capstan windlass of the American Ship Windlass Co. The present modern style of windlass is simple in its construction, though thoroughly supported at all points where the strains come. Another feature is the new locking gear.

Steady Trade Increase.—An indication of the steady increase in the business of Thos. Carlin's Sons' Foundry, Machine and Boiler Works, Allegheny, Pa., is given in the following large shipments by them: 173 cars in 1893, 223 cars in 1894, 335 cars in 1895, and 406 cars in 1896. Quite a number of pans for grinding ore have been shipped to Utah, and they have just gotten up a new trolley, which is used in the new forts being erected by the government.

New Firm Formed.—Mr. S. C. Munoz, for some years special sales agent for the Heine Boiler Co. and for the past year general sales agent for the Edgemoor boiler, has associated with himself in business Mr. E. C. Darley, late of the Rankin & Fritsch Engine Co., of St. Louis, and previous to that associated with J. P. Witherow, the celebrated steel-works builder, and these two have formed a new firm, under the name of Munoz & Darley, with offices in the Rookery, Chicago, Ill. They will act as the general Western representatives of the Cahall vertical and Cahall-Babcock & Wilcox boilers, manufactured by the Aultman & Taylor Machinery Co., Mansfield, O.

Two Naphtha Launches.—Mr. C. H. Osgood, New York Yacht Club, owner of steam yacht Narwhal, has just entered into a contract with the Gas Engine & Power Co. and Chas. L. Seabury & Co., of Morris Heights, New York city, to build him a very handsome 40-foot naphtha launch, to be equipped with a twelve horse-power motor. Mr. Osgood will use the new launch on the Thames river in the vicinity of New London. Mr. Harrison B. Moore, N. Y. Y. C., has also placed with these companies an order for a new 20-foot naphtha launch, which will be used as tender on his new steam yacht Marietta, now building. This same firm will also build for the Marietta a new cutter, gig and dinghey.

Belting for Dynamos.—A new brand of leather belt called the "Dynamo," especially adapted to electrical work, has been placed on the market by Messrs. I. B. Williams & Sons, of Dover, N. H. It is made throughout of the very choicest centres and

from picked butts. Each centre is thoroughly stretched before going into the belt, and every belt is treated with a special dressing which adds to its pliability and power. This is a special high-speed belt. The backbone of the hide runs through the middle of each centre piece, and thus in the centre of the entire belt, completely bracing it and securing the utmost steadiness in running. The belt has no fastening but cement of the finest quality. A catalogue can be had by addressing the office of the company, Dover, N. H.

Electric-light Plants.—A very complete electric power and lighting plant is now being placed in position in the extensive works of the Shoenberger Steel Co., Pittsburg. The engines were furnished by the Ball Engine Co., Erie, Pa., and the generators by the Siemens-Halske Electric Co., Chicago. The Ball Engine Co. will also furnish the engine for a direct-connected set for electric lighting, ordered by the Apollo Iron & Steel Co., at Vandergrift, Pa. The engine is a 150 horse-power vertical compound, direct connected to a 90-kilowatt General Electric alternating machine. This company already has an electric light and power plant, consisting of three 400 horse-power tandem compound engines made by the Ball Engine Co., which are direct connected to Westinghouse generators of 225 kilowatts each.

Chicago Water Works.—The largest contract for water-works pumping machinery ever placed in this country has just been made by the city of Chicago. It amounts to \$437,600, and covers six vertical triple-expansion direct-acting high-duty pumping engines, and has been awarded to Henry R. Worthington, of Brooklyn, N. Y. These engines have a daily pumping capacity of 20,000,000 gallons against a head of 150 feet, and will be supplied with steam at a pressure of 140 pounds to the square inch. The engines will each be of 530 horse-power. Mr. Worthington is also building three similar engines for the city of Brooklyn under a contract amounting to \$385,000. These engines each have a daily capacity of 20,000,000 gallons, to be delivered against a head of 168 feet, and the steam will be supplied at a pressure of 135 pounds to the square inch, each engine being of 600 horse-power.

Tapping Water Pipes.—With water-works officials and with the plumbing trade the Mueller tapping machine is a favorite. The manufacturer states that over 2000 machines of its make are used in the United States alone. The city of Chicago adopted the Mueller machine many years ago, and at the present time has eight or ten machines in use in the different departments. The machine is not built to make it as light as possible, but it is solid and strong in every part, and guaranteed to do more work with less repairs than any other machine manufactured. There is no water lost in making a tap, now matter how heavy the pressure may be, and the ease of operating under high and low pressure is the same. The H. M. Corporation needs no introduction to the users of the Mueller machine and to hundreds of others who can attest to the high quality of these goods. The machines and cocks are made by the H. Mueller Manufacturing Co., Decatur, Ill.

TRADE LITERATURE.

Mills for Miners.—Persons engaged in mining operations will be interested in a catalogue just issued by the Gates Iron Works, of Chicago, Ill. It dwells particularly upon the Tremain steam stamp mill, but incidentally gives many useful hints about boilers, assays, tests, retorts, feeders, ore breakers and points on operating.

Patent Raw-hide Gears.—The latest catalogue of the New Process Raw Hide Co., Syracuse, N. Y., contains several pages of testimonials from persons who use machinery under great strain, telling of the valuable qualities of the gears manufactured by the company. Many of these letters are from officials of electric street-railway companies. The catalogue also gives quotations on gears, washers, mallet and chisel handles.

An attractive brochure, "Rhode Island, 1636-1896," compiled by the Consolidated Illuminating Co., of New York, contains a great number of sketches of men who in mercantile and manufacturing pursuits have contributed to the prosperity of the State. Among those mentioned are William A. Chapman & Co., general contractors, Providence, R. I. The firm is known in the South by its work on the Columbia Mill, in South Carolina, and on the great Pelzer dam in the Saluda river, built for the Pelzer Manufac-

turing Co., and the power-house of the Columbia Canal Co.

Road-making Machinery.—The widespread and rapidly developing interest in the proper construction of roads renders peculiarly timely the publication of the handsomely illustrated catalogue of the American Road Machine Co., of Kennett Square, Pa. Thirty-odd cuts are shown of stone crushers, rollers, graders, ditchers, elevators, screens, engines, water sprinklers, sweepers, etc., and their operations are explained.

Asbestine Cold-water Paint.—One of the problems of owners of factories and others who desire to keep the walls and ceilings of their establishments neat and clean is the selection of a proper coating. They find that lime wash is unsatisfactory and that oil paint is costly. To meet this difficulty asbestine cold-water paint has been placed on the market by George S. Adams, the Thomas Jefferson, Brooklyn, N. Y. A catalogue which he has issued explains the use of the new material and contains many testimonials from persons who have used it.

The new catalogue of the Norton Emery Wheel Co., Worcester, Mass., which will be sent to all who desire it, calls particular attention to the fact that the wheels manufactured by this concern are by what is known as the vitrified process; that is, they are subjected to intense heat, which makes it possible to use only the purest and best qualities of emery and corundum in their manufacture. Under this process the particles of the wheel are held together so finely that every particle of the wheel cuts and there is no waste material to clog or interfere with the work whatever.

Among civil engineers, structural iron builders and architects questions about the protection of iron and steel are constantly arising. To meet these the Goshen Manufacturing Co., of Canton, Ohio, has reproduced in a neat pamphlet extracts from "The Preservation of Iron and Steel Structures," by William Broom, an authority of London, England. Pasted in the pamphlet is a paint table, together with a comparison of pure iron oxide, red lead and carbonizing coating with other paints, showing the relative cost of keeping an 80-foot railroad bridge in first-class protection for 32 years.

Modern Marine Machinery.

Complete outfits in either single or twin screw, side or stern paddle wheel machinery, built by Marine Iron Works, No. 9 Dominick street, Chicago. Catalog free.

The *Southern States* magazine is read by thousands of farmers, fruit-growers, stock-raisers and business men in all the North, West and Northwest, who are looking to the South as a future home and are trying to inform themselves as to the relative advantages of different parts of the South. If you have farm, garden or orchard property for sale the *Southern States* will put you into communication with buyers. Send for sample copy and rates. Manufacturers' Record Publishing Co., Baltimore, Md.; Wm. H. Edmonds, editor and manager.

Through Sleeping Cars to Toledo.

Commencing February 21, the B. & O. R. R., in connection with the B. & O. S. W. and the C. H. V. & T., will establish a daily line of Pullman sleeping cars between Baltimore, Washington, Columbus and Toledo, via Parkersburg and Athens. The west-bound train will leave New York 5 P. M., Philadelphia 7.40 P. M., Chester 8 P. M., Wilmington 8.19 P. M., Baltimore 10.15 P. M., Washington 11.25 P. M., and arrive Columbus 2.55 and Toledo 6.26 the next afternoon. This is the best service ever offered between Washington, Central Ohio and Michigan, and will doubtless prove to be popular with the public.

Mardi Gras—New Orleans, La., March 2 and 3, 1897.

The rate of one fare for the round trip will be made via the Queen & Crescent Route February 26 to March 1, to New Orleans account Mardi Gras.

It is the only line running solid vestibuled trains to New Orleans, and is eighty-six miles shortest.

A trip over the Queen & Crescent to the quaint and intensely interesting city by the Gulf made to include a visit during the Mardi Gras season is delightful from start to finish.

For further information call on or address Chas. W. Zell, D. P. A., Cincinnati, Ohio; O. L. Mitchell, D. P. A., Chattanooga, Tenn.; W. C. Rinearson, general passenger agent, Cincinnati, Ohio.

INCREASED ITS CAPITAL.

The Fidelity & Deposit Company of Maryland.

One of the most progressive and solid surety companies in the country is the Fidelity & Deposit Co. of Maryland. It has been in operation about seven years, and on April 1 will have a paid-in capital of \$1,000,000. The directors authorized on February 3 an increase of the capital. This will be sold at \$100 per share, par value \$50. The premium of \$250,000 will be added to the surplus. With a capital of \$1,000,000 and surplus, reserve and undivided profits of \$1,225,000, the company will have cash resources of \$2,225,000, to which could be added stockholders' liability of \$1,000,000.

The financial strength of the company has behind it the standing and solidity of a representative body of directors, including Governor Lowndes, of Maryland; United States Senator Gorman, and men prominent in banking and commercial circles.

Edwin Warfield, the president, is a lawyer, who was a few years ago surveyor of the port of Baltimore. The vice-presidents are H. Crawford Black, president of the Black-Sheridan-Wilson Co. and of the Barton & George's Creek Valley Coal Co., director of the National Union Bank and treasurer of the Potomac Coal Company, and Joseph R. Stonebraker, a director of the Continental National Bank. The secretary and treasurer is Herman E. Bosler.

The company, designed to expedite and simplify the surety business by placing it upon a strictly business basis, is accepted by the United States government as sole surety on bonds of distillers, collectors of customs and internal revenues, gaugers, storekeepers and other officials and employees, and its bonds are accepted by judges of State courts and United States circuit and district courts. It becomes surety on bonds of contractors, officers and employees of banks, mercantile houses, railroad, express and telegraph companies, officials of States, cities and counties, executors, administrators, guardians, trustees, receivers, assignees, committees, etc., though it does not act as executor, administrator, guardian, receiver or trustee.

Bible Boys and Girls. How they looked, where they lived and what they did. By Calvin Dill Wilson and James Knapp Reeve. Illustrated by George Foster Barnes. 1 vol., 8vo., cloth. \$1. Boston: Lothrop Publishing Co.

The personality of the Bible characters is always matter of interest and speculation. Young readers wonder what manner of man or woman, boy or girl such or such a character in the Bible narrative could have been, and try to picture to themselves the child-life of their favorite hero or heroine. It is in response to this inquiry that the authors of "Bible Boys and Girls" have prepared their entertaining and instructive volume. Upon the Bible narrative as a base they have built up the stories of the boy or girl life of twenty-seven of the most interesting figures in Bible story, drawing freely upon history, geography, tradition and archaeology to supply background, atmosphere and individuality. They have done their work well; they have prepared a volume that is full of interest in itself, while at the same time it furnishes a side-light and help for young Bible students at once practical, suggestive and inspiring. The illustrations by George Foster Barnes are telling and dramatic. The book is published at a popular price, so as to be within the reach of all.

FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

No advertisements but those of a financial character will be accepted for the following page.

The Canadian Banking System.

Mr. S. Wittkowsky, of Charlotte, N. C., a capitalist who is president of the Blacksburg (S. C.) Land & Improvement Co., has been giving close study to banking matters, and has applied to the legislature for a charter for a new bank embracing some of the features of the Canadian system. Mr. Wittkowsky has received from Mr. Thomas Fyshe, of the Bank of Nova Scotia, of Halifax, a letter, from which we take the following extracts:

"You will see by the bank act that each bank has power to issue its own notes to the amount of its paid-up capital. If it were not for this privilege we could not afford to keep open so many branches. The branch system in such a sparsely-populated country as ours is largely dependent on the right to issue notes as we do. No separate account of the notes circulated at each branch is kept. It could be done, but it would be too much trouble and expense. When our branches want funds we remit them our notes. The whole circulation of the country is carried on by means of these notes, with the government notes of \$1 and \$2 denomination. We cannot issue anything less than \$5 notes. The notes collected each day are sorted out and exchanged with other banks, along with charges. The settlement between banks in the country towns are made by means of drafts on Montreal, in Nova Scotia by drafts on Halifax, and final settlements in Montreal, Halifax or St. John, N. B., are made in what we call common or government notes, which are legal tender.

"A bank can have as many branches as it chooses to open. There is no government inspection, but each bank has an inspector of its own whose work can be, and usually is, much more effective and thorough than that of any government official could possibly be. Originally branch managers or agents were frequently selected for their local influence and knowledge, and often carried on other business. This is now entirely done away with, and all branch managers are now what may be called 'professionals.' They have entered the bank as juniors, at the age of fifteen to nineteen, and gone through all the different stages of work, not frequently being moved from office to office as occasion may require, and thus getting a wider and more comprehensive knowledge of men and things than would otherwise be possible. The inspector visits each office from time to time as the management may see fit, no notice being given of his visits. All notes and discounts falling due at each branch are reported at the head office in detail every day or two. A weekly balance-sheet is also forwarded, and a fortnightly statement is made of all the interest deposits, interest consumption and charged accounts. There are also monthly, quarterly and yearly returns, which each bank gets up to suit itself. There is no uniformity about this. They vary according to the ideas of the different managers. The system works with great smoothness and efficiency. No interest or district in Canada can complain of the lack of banking facilities nor of dear money.

On the contrary, the country has too many bank officers, and credit is too abundant and too cheap. We have no defalcations worth speaking of. Individuals who are inclined that way are almost always detected in time through our close supervision and inspection."

The Macon Bond Sale.

The recent sale of \$130,000 in bonds of the city of Macon, Ga., advertised in the Manufacturers' Record, attracted bidders from New York, Philadelphia, Indianapolis, Boston, Baltimore, Atlanta, Columbus and Moultrie, Ga. E. D. Sheppard & Co., of New York, secured the entire amount at 103.45. The bonds bear 4½ per cent. interest. The price is considered an excellent one for the interest rate of the securities.

Good Opening for a Bank.

The idea of opening another bank at Ocala, Fla., is now being considered by the business men of the place. Ocala has a population of over 5000 people, and is located in one of the best portions of the State, but at present has no banking facilities whatever. An excellent opportunity is presented here for the investment of outside capital in such an enterprise. R. L. Anderson and B. A. Weathers are interested.

New Corporations.

E. J. Joffron and others have formed a banking company at Marksville, La. Leopold Sigwart and others have formed the Morgantown Loan Society of Morgantown, W. Va.

A bill is pending in the Alabama legislature to incorporate the Montgomery Security Co., of Montgomery, Ala.

The Industrial Safety Deposit Co. has been formed at New Orleans, with \$100,000 capital, by A. H. Pettit, P. M. Mayer and others.

E. H. Reynes and H. Daspit are interested in the formation of a bank at New Orleans, to have \$200,000 capital. It is to be called the Protective Bank.

The People's National Bank of Winston, N. C., has taken the building and accounts of the First National Bank, and will succeed it. J. W. Fries is president.

The following officers have been elected by the banking company about to begin business at Terry, Miss.: W. J. Davis, president; W. H. Tribette, first vice-president; E. Simpson, second vice-president, and R. F. Young cashier. The bank will be ready for business by the 1st of March.

New Securities.

The proposed issue of \$35,000 in bonds has been authorized to be sold by the city of Laredo, Texas. Address the mayor.

The city of Huntsville, Ala., has received authority to issue \$40,000 in 5 per cent. sewer bonds. Address the mayor.

The Athens (Ga.) Manufacturing Co. has decided to issue \$600,000 in bonds to bear 6 per cent. interest. Address the president.

The town of Grenada, Miss., has voted in favor of the proposed issue of \$43,500 in bonds for a water-works system. Address the town clerk.

It is reported that the issue of \$20,000 bonds to be made by the town of Dothen, Ala., will be placed on the market soon. Address the town clerk.

The people of Charlottesville, Va., will vote on the proposed issue of \$30,000 in 5 per cent. bonds for improvements at an election to be held in May next.

The Harrisburg (Pa.) Trust Co., it is reported, has purchased \$150,000 in 6 per cent. bonds of the James E. Pepper Distilling Co., of Lexington, Ky.

Bonds will probably be issued, it is reported, to construct a bridge in Craven county, North Carolina. The amount is \$35,000. The county commissioners, at New Berne, may be addressed.

The State of Alabama has been authorized by act of the legislature to issue 50-year bonds in place of the outstanding issue and to refund its entire debt. The governor, at Montgomery, has the matter in charge.

The City Passenger Railway Co., of Baltimore, has decided to issue \$500,000 in certificates of indebtedness at 4½ per cent. interest. They are to be dated from May 1, and are to be used in paying the company's floating debt and in making necessary improvements.

Dividends and Interest.

The Kentucky Wagon Co., of Louisville, has declared a quarterly dividend of 1½ per cent.

The Capital Loan Association of Richmond has declared a semi-annual dividend of 3½ per cent.

The State treasurer of North Carolina has received the 3½ per cent. dividend on the stock of the North Carolina Railroad paid by the Southern Company under agreement.

Financial Notes.

According to London advices, a block of Richmond & Danville 6 per cent. bonds has been sold abroad for 126. The bonds were included in the reorganization at the former rate of interest. The price quoted is regarded as very high by financiers.

The Mercantile Trust Co. of New York notifies holders of reorganization certificates for bonds and stocks of the Norfolk & Western Railroad system that on and after February 24 holders of reorganization certificates issued by them may exchange the same at the office of the trust company for the securities of the new company, to which they are entitled. The new bonds are for \$500 and \$1000, and the shares are for \$100.

Monetary Systems of the World. By Maurice L. Muhleman, deputy assistant treasurer of the United States at New York. Publisher, Charles H. Nicoll, New York.

This is a revised edition of a work which since 1894 has been a handy and authoritative reference volume for those who desire to speak, write and converse intelligently upon a leading and vital question of the day. The author has had the advantage of acquiring, during an experience of many years from the character of inquiries made of him and other officials, the knack of setting forth information in the desired direction, and in an acceptable style. He has taken his statistical matter from official sources for the most part, and has used nothing derived elsewhere without careful verification. For nearly twenty-five years the author has been connected with the treasury service, and is one of the foremost experts in the history of currencies and governmental finances, and the value of his original publication has been increased by the comprehensive treatment of propositions for the solution of the currency problem and causes for recent bond issues in the United States which have been so prominently in the public eye since 1893.

We invite you to subscribe to the Manufacturers' Record. Read this issue carefully and see what an immense amount of valuable information it contains that you can find nowhere else. Subscription price \$4 a year; \$6.50 to foreign countries.

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Report of the Electrical Commission of Baltimore City on a general subway system to be owned by the city.

This is practically the report of Mr. Nicholas S. Hill, Jr., engineer to the commission, who recommend municipal ownership of a conduit system to be constructed in accordance with his plans. Mr. Hill has carefully considered different methods by which wires might be carried underground, and believes that a subway or tunnel for carrying wires and pipes and the so-called "drawing-in" systems of conduits are the only ones worthy of mention. He presents the advantages and disadvantages of different kinds of conduits, their comparative cost, whether in combined or separate systems, deals with the subjects of house service, distribution and ventilation, and recommends the following: The creation of a permanent electric commission; the municipal ownership of all conduits; the depression of all wires within certain areas; the "drawing-in" system of conduits; the use of either the Camp or McRoy terra-cotta conduits for tank lines; the adoption of separate systems for telegraph and telephone distribution, and for electric-light and other high potential distribution; ventilation by means of a central blower; regulation of rentals in the beginning; subways at least 50 per cent. larger in capacity than the present service requires; reduction of rental as the service increases. Accompanying the report is a valuable appendix containing rules for the proposed system compared with those on similar subways in New York, the District of Columbia, Paris and Great Britain, and a variety of kindred papers of interest not only to engineers and city authorities, but to citizens who are studying the best means of adopting modern science to the solution of vexed municipal questions.

REORGANIZATION

Norfolk & Western Railroad System.

To the Holders of Reorganization Certificates for Bonds and Stocks:

On and after February 24th, 1897, holders of Reorganization Certificates issued by THE MERCANTILE TRUST COMPANY for Bonds and Stocks of the

Norfolk & Western Railroad Co.
the Roanoke & Southern Railway Co.,
and the Lynchburg & Durham Railroad Co.

may exchange the same at the office of the Trust Company, Equitable Building, New York, for the securities of the new Company to which they are entitled.

The new Bonds are for \$500 and \$1000 each, and the shares are for \$100 each. Arrangements have been made with the Reorganization Committee whereby holders of certificates entitled to fractions of a bond or of a share may sell such fractions, or buy such amounts as may be necessary to entitle them to an entire Bond or an entire share, at the office of the Trust Company; the price of fractions being fixed by the Committee from time to time according to quotations on the Exchanges.

Holders transmitting Reorganization Certificates by mail will please indicate whether they wish to sell or buy fractions, and whether they desire the new securities sent to them by mail or by express at their own expense.

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The Manufacturers' Record and Its Work.

Hon. Chas. W. Dabney, Jr., Assistant Secretary, Department of Agriculture, Washington, D. C., and also president of the University of Tennessee, Knoxville, in a recent letter, said:

"The Manufacturers' Record surprises me constantly. You have a wonderful genius for discovering how to advance the industrial interests of the South. For fertility in good schemes, for enterprise in carrying them out, for zeal in the cause of Southern development, for thoroughness in its methods, and for accuracy in its reports, the Manufacturers' Record is unsurpassed in the South, and, as far as I know, in the country. No other section of our country and no country in the world, as far as my knowledge extends, has such a devoted, such an untiring and such an intelligent friend and supporter as the South has in the Manufacturers' Record. It is impossible to measure the good that you have done in our beloved country. These thoughts are suggested by some of your recent splendid achievements, and I am moved to write them to you as a slight testimonial from one son of the South. I hope that you may be preserved in health and vigor for many years to direct this noble enterprise, and that the Manufacturers' Record has many achievements still ahead of it which will far surpass any of those already accomplished."

The Manufacturers' Record stands as the accepted medium of communication between the South on one side and the North and West on the other. The business man of the North or West or of Europe who wishes to keep posted as to the marvelous advance of the South is compelled to read the Manufacturers' Record in order to do so, and the manufacturer seeking a market in the South for machinery of any kind finds the Manufacturers' Record his best advertising medium.

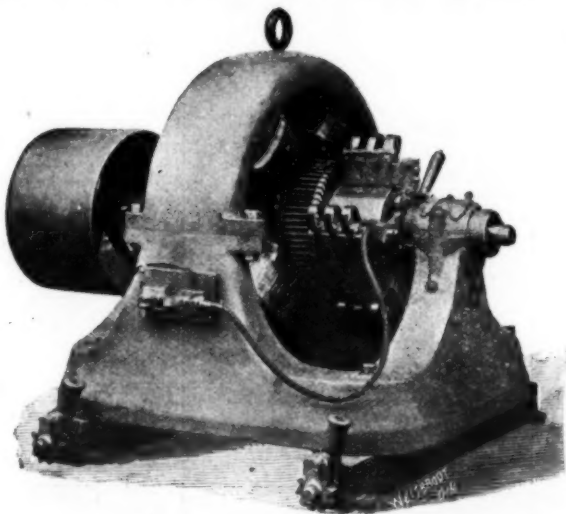
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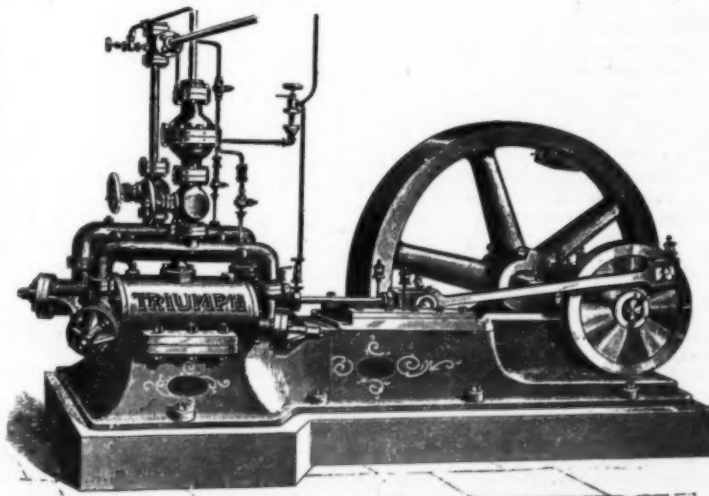
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For "Classified Index" see pages 3, 5 and 7.

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